The Commonwealth of Massachusetts

DEPARTMENT OF PUBLIC UTILITIES

D.P.U. 22-100-A September 26, 2024

Investigation of the Department of Public Utilities, on its own motion, instituting a rulemaking pursuant to G.L. c. 30A, § 2, and 220 CMR 2.00, to amend 220 CMR 100.00 and 220 CMR 101.00.

ORDER ADOPTING FINAL REGULATIONS

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INTRODUCTION AND PROCEDURAL BACKGROUND

On December 5, 2022, pursuant to G.L. c. 30A, § 2 and 220 CMR 2.00, the Department of Public Utilities ("Department") instituted this rulemaking to amend 220 CMR 100.00, Massachusetts Gas Distribution Code, and 220 CMR 101.00, Massachusetts Natural Gas Pipeline Safety Code, in the interests of promoting safety and ensuring regulatory compliance. Several of the changes reflect recommendations from the National Transportation Safety Board ("NTSB") report regarding the 2018 incident in Merrimack Valley. Changes also reflect recommendations from the comprehensive Statewide Assessment of Gas Pipeline Safety: Commonwealth of Massachusetts Final Report by Dynamic Risk ("Dynamic Risk Report") following the 2018 incident in Merrimack Valley. In addition, the Department proposes changes to comply with Chapter 8 of the Acts of 2021, An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy ("Climate Act"). Finally, the Department offers other changes to clarify certain provisions, ensure consistency, correct minor errors, update references, and delete outdated, duplicative, or unnecessary information. By this Order, the Department adopts final regulations ("Final Regulations") contained in 220 CMR 100.00 and 220 CMR 101.00.[1]

Pursuant to the requirements of G.L. c. 30A, § 2, notice of this rulemaking was published in The Boston Globe and The Boston Herald on December 21, 2022. Written

[1] Attached hereto as Appendix A is a copy of the Final Regulations marked to show the changes made to Proposed Regulations 220 CMR 100.00 and 220 CMR 101.00. Attached hereto as Appendix B is a clean version of the Final Regulations.

comments on the proposed regulations were due to the department on January 12, 2023.[2] The Department held a public hearing on February 1, 2023.[3] Reply Comments were due on February 15, 2023.[4] On March 23, 2023, as requested in many of the comments, the Department conducted its first technical session. The Department conducted its second technical session on April 27, 2023. Additional written comments were due June 30, 2023.[5] Additional reply comments were due on July 31, 2023.[6] The Secretary of the Commonwealth of Massachusetts ("Secretary of State") provided the Department with

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2 The following entities submitted written initial comments: The American Public Gas Association ("APGA"); The Berkshire Gas Company ("Berkshire"); NSTAR Gas Company and Eversource Gas Company of Massachusetts, each d/b/a as Eversource Energy ("Eversource"); Liberty Utilities (New England Natural Gas Company) Corp. d/b/a Liberty ("Liberty"); Boston Gas Company d/b/a National Grid ("National Grid"); Northeast Gas Association ("NGA"); Fitchburg Gas and Electric Light Company d/b/a Unitil ("Unitil"); and New England Gas Workers Alliance ("NEGWA"). The following natural gas local distribution companies ("LDCs") submitted joint comments in addition to their individual comments: Eversource, Berkshire, National Grid, Liberty and Unitil. The Attorney General of the Commonwealth of Massachusetts ("Attorney General") submitted a Notice of Intervention.

3 The following people spoke at the Public Hearing: Paul Armstrong on behalf of NGA, Kathleen Laflash on behalf of NEGWA, and Kevin Penders of Keegan Werlin LLP on behalf of the LDCs.

4 The following entities submitted reply written comments: The Attorney General and the LDCs.

5 The following entities submitted additional written comments: NEGWA, APGA, and NGA.

6 The following entities submitted additional reply comments: NGA and the Attorney General.

stylistic and formatting edits to the Proposed Regulations, which we incorporate in the Final Regulations.

I. SUMMARY OF COMMENTS

Many commenters raise concerns with the overall timelines for implementing these regulations and new provisions that will have substantial impacts on the procedures and business practices utilized by each company (Berkshire Comments at 1-2; LDCs Initial Comments at 1-3; NGA Initial Comments at 1-2, 10; Unitil Comments at 8-10; Eversource Comments at 1; APGA Initial Comments at 3; National Grid Comments at 1-2; Tr. at 8-9, 16). In particular, many of the concerns focus on proposed changes to overpressure protection, contractor crew ratios, operator qualifications, and distribution maps and records. The comments suggest some of these provisions would impose significant operational burdens without providing significant public safety enhancements (Berkshire Comments at 1-2; LDCs Initial Comments at 1-3; NGA Initial Comments at 1-2, 10; Unitil Comments at 8-10; Eversource Comments at 1; APGA Initial Comments at 3; National Grid Comments at 1-2; Tr. at 8-9, 16).

Some commenters offer strong support for the changes. The Attorney General supports the Department's proposals overall and recommends several changes to the proposed rules on certain topics, such as oversight of Contractors, the operability of critical valves, and other recommendations to align the proposed language with the federal regulations, the Pipeline and Hazardous Materials Safety Administration ("PHMSA") standards, and Department precedent (Attorney General Reply Comments at 1-2; Attorney General

Supplemental Reply Comments at 1-2; 15-16). Similarly, NEGWA offers strong support for the regulations, particularly regarding contractor crew ratios and operator qualifications (NEGWA Initial Comments at 2-4; Tr. at 10-15).

In response to these concerns, and upon further consideration, we have made certain changes to the provisions noted above and implement the final regulations as noted below. The Department's overarching concern with amending the regulations is promoting public safety with the enhancements described below. Several commenters raise unique and specific scenarios indicating that compliance with certain provisions of the regulations may be difficult or overly burdensome. The Department notes that in these specific and few instances, the provisions of 220 CMR 101.03 are applicable. We plan to meet with the stakeholders as soon as practicable to discuss how best to implement these provisions.

II. CHANGES TO PIPELINE SAFETY FINAL REGULATIONS

A. Definitions, 220 CMR 101.02

The Department received comments on three definitions: "Contractor," "Gas Work," and "Uprating." The Department addresses these comments and its analyses in the particular sections where the definitions appear. The definitions have been capitalized for clarity.

B. Notice of Proposed Constructions, 220 CMR 101.04

1. Comments

Commenters recommend three changes to Proposed Regulation 220 CMR 101.04. First, given the number of pipeline installation projects that exceed 1,000 feet, NGA recommends increasing the minimum length required for notification of proposed construction

to 2,500 feet to minimize administrative costs of filing notifications with the Department (NGA Supplemental Comments at 6). Second, NGA proposes deleting "new" in subsections (a) and (b) to clarify that this regulation pertains to both new construction and pipeline replacement projects (NGA Supplemental Comments at 6; National Grid Initial Comments at 7). Third, commenters recommend changes to subsection (b) to require notice of proposed construction on projects where the pipeline will have a maximum allowable operating pressure ("MAOP") greater than 200 psig or, in the alternative, on transmission pipelines (NGA Supplemental Comments at 6; National Grid Comments at 3). National Grid also requests clarification on the definition of Uprating (National Grid Comments at 7). National Grid requests further clarification as to whether the proposed regulation requires operators to re-establish MAOP when physically disconnecting and reconnecting a low-pressure facility and whether the two-increment requirement for uprating pipelines applies to low pressure systems (National Grid Comments at 7).

2. Analysis and Findings

The Department rejects the recommendation of NGA to increase the MAOP or length for notification of proposed construction projects. The Department finds that such notice is necessary to ensure that the Department has reasonable time to monitor large construction projects. Such notice is not overly burdensome for operators who are already tracking and reporting most of these construction projects to the Department. The Department does, however, amend subsections (a) and (b) to clarify that notice is required for both new construction and pipeline replacement projects. As to the final concern, the Department's

only change to the definition of Uprating is to amend "Operation" to "Operating" in the Final Regulations. Final Regulations, 220 CMR 101.02. Further requests for clarification or interpretations on uprating pipelines should be directed to PHMSA.

C. Rules or Modifications related to 49 CFR Part 192, 220 CMR 101.06

Given the numerous comments and subsections in 220 CMR 101.06, the Department addresses each subsection for clarity.

1. Class Locations, 220 CMR 101.06(1)

There were no comments on the proposed 220 CMR 101.06(1). The Department adopts the language as proposed. Final Regulations, 220 CMR 101.06(1).

2. Overpressure Protection, 220 CMR 101.06(2)

a. General Comments.

The Attorney General expresses support, noting that the proposed regulations "will further improve the operators' safe operation of their distribution systems affecting system regulation, regulator station design, and overpressure protection" (Attorney General Reply Comments at 9). APGA notes that it supports advancing pipeline safety regulations in ways that are specific to the unique operating environments within the state. APGA raises concern that a state rulemaking that precedes a federal rulemaking process may ultimately cause confusion for state operators (APGA Initial Comments at 3; APGA Supplemental Comments at 2). APGA also comments that it supports the Initial and Supplemental Comments submitted by NGA (APGA Supplemental Comments at 2).

b. 220 CMR 101.06(2)(a)

i. Comments

The Department received numerous comments regarding Overpressure Protection, many of which request limiting 220 CMR 101.06(2) in application to low-pressure systems (Eversource Comments at 1-2; LDCs Initial Comments at 5). At the technical session on April 27, 2023, National Grid, Berkshire, and Westfield all requested application to low-pressure systems only.

The LDCs jointly, and individually, also raise concerns about the implementation timeline considering the level of investment required and ongoing supply chain issues (LDCs Initial Comments at 6-7; Berkshire Comments at 1-2; Liberty Comments at 2, Unitil Comments at 1-2). The LDCs suggest that there are delays in obtaining required materials necessary to achieve compliance due to manufacturing or transit issues and they "will likely be competing directly with the other LDCs in this tight two-year window for the same supplies in an already supply chain-constrained environment, potentially driving up prices further" (LDCs Initial Comments at 6-7). NGA cites several barriers that would prevent operators from obtaining compliance within the proposed timeline, including the availability of qualified personnel, labor union agreements, contractor agreements, the availability of licensed professional engineers, design and siting requirements, permitting, procurement, limitations on construction timeframes due to weather constraints, cooperation from municipal agencies, and the large number of regulator stations in the state (NGA Supplemental Comments at 3-4, 9-12, NGA Initial Comments at 9). Berkshire, Eversource, Liberty, and

Unitil all expressed concern about the proposed deadline at the technical session on April 27, 2023.

NGA proposes an alternative approach that would involve the risk ranking of regulator station facilities. This approach would include an assessment of existing Gas System Enhancement Plans ("GSEPs") (NGA Supplemental Comments at 9-12, NGA Initial Comments at 3). NGA recommends that the retirements and retrofits associated with GSEP proceed in accordance with prior scheduled plans and operators identify them within the overall risk-based project plans (NGA Supplemental Comments at 10-12).

NGA proposes the following edits, which are underlined in red font:

> (a) Operators shall take steps to protect their distribution systems from overpressure events. Operators shall conduct a risk analysis and risk ranking of regulator stations to prioritize investments in regulator stations to comply with this part. The risk analysis shall also consider the abandonment of regulator stations as part of the Operator's Gas System Enhancement Program (GSEP) plan (if one exists). Operators shall complete this assessment and develop a regulator station investment plan within one year of the effective date of 220 CMR 101.00. Operators shall complete facility modifications in accordance with their approved regulator station investment plan by the timelines stipulated in the plan and set forth below, unless otherwise approved by the Department. Within the regulator station investment plans, operators shall include provisions to: ~~In addition to complying with 49 CFR Part 192, operators shall implement the following additional requirements within two years of the effective date of 220 CMR 101.00 or as otherwise stipulated below, operators shall:~~

(NGA Supplemental Comments at 19).

Eversource proposes clarifications to 220 CMR 101.06(2)(a) regarding overpressure protection in low-pressure systems (Eversource Comments at 1-2). Eversource emphasizes that low-pressure systems lack customer meter regulators, making all customers vulnerable if the district regulator fails, and suggests focusing on low-pressure systems for compliance

(Eversource Comments at 1-2). Eversource, Liberty, and Unitil separately reiterate concerns surrounding the implementation timeline (Eversource Comments at 2, Liberty Comments at 2, Unitil Comments at 1-2). Unitil alternatively suggests that the Department set the period for compliance based on timelines derived from operator-specific risk-based evaluations (Unitil Comments at 2 n. 1). Eversource recommends extending the proposed two-year timeline to five years, reducing the risk of compromised safety and quality due to external factors such as resource constraints and rising costs (Eversource Comments at 2). Eversource recommends 220 CMR 101.06(2)(a) to read as follows:

> Operators shall take steps to protect their low-pressure distribution systems from overpressure events. In addition to complying with 49 CFR Part 192, unless otherwise agreed to or amended by the Department at the request of the operator, operators shall implement the following additional requirements within ~~two~~ five years of the effective date of 220 CMR 101.00, operators shall:
>
> (Eversource Comments at 2).

Unitil suggests the implementation period for 220 CMR 101.06(2)(a) extend to coincide with the station rebuild work planned as part of GSEP. Unitil suggests the following language:

> (a) Operators shall take steps to protect their distribution systems from overpressure events. In addition to complying with 49 CFR Part 192, operators shall implement the following additional requirements within ~~two~~ five years of the effective date of 220 CMR 101.00~~,~~ or within ten years of the effective date of 220 CMR 101.00 if the station will be retired or rebuilt within ten years as part of GSEP, operators shall
>
> (Unitil Comments at 2).

The Attorney General supports the Department's timelines and suggests that the risk-based approach proposed by NGA is vague (Attorney General Supplemental Reply

Comments at 14). The Attorney General also points out that operators can petition the Department for exceptions if they are unable to comply with the regulations within the required timeline (Attorney General Supplemental Reply Comments at 14-15).

ii. Analysis and Findings

The Department declines to adopt a risk-based approach and also declines to extend the implementation deadline to ten years. The Department agrees to a slight modification of the timeline, however; the Department will implement a timeline adjustment from "two years of the effective date" to "three years of the effective date." Final Regulations, 220 CMR 101.06(2)(a). The Department recognizes the challenges operators will face in implementing these requirements but agrees with the Attorney General that the proposed timelines are consistent with the Minimum Federal Safety ("MFS") Standards, Pipeline Safety Management System ("PSMS"), industry best practices, and recommendations in the Dynamic Risk Report. The Department further agrees with the Attorney General that the approach outlined by NGA "is vague and indicates insufficient recordkeeping and inadequate [Distribution Integrity Management Program ("DIMP")] DIMP implementation. For over twelve years, the DIMP rule has required operators to know their systems; identify additional information needed; identify threats; and implement measures to address risks. MFS Standards, § 102.1007" (Attorney General Supplemental Reply Comments at 14). The Attorney General correctly points out:

> In 2020, Dynamic Risk reported that the Operators may not be appropriately tracking, managing, learning, and reporting over pressurization events. Dynamic Risk Report, at 61. Some operators have had difficulty collecting and reporting over-pressurization data "with any level of detail or analysis of cause." Id. The Operators need to fully

> identify threats to the safety of their systems – not just threats "purely focused more narrowly on leak prone pipe" – as historically has been the case in the operators' DIMP and GSEP plans. Id. at 63.
>
> (Attorney General Supplemental Reply Comments at 14).

The Department notes that operators may apply for an exception to this provision if they are unable to comply. 220 CMR 101.03.

The Department declines to limit the scope of the regulation to low-pressure distribution systems. Overpressure events have historically occurred on both low-pressure and high-pressure systems (See, e.g., Boston Gas Company d/b/a National Grid, D.P.U. 18-PL-40 (2020); Bay State Gas Company, D.P.U. 19-PL-05(2020)). The Department finds that the protection of the whole distribution system from overpressure events is vital to public safety. It is the Department's expectation that an operator will prioritize its low-pressure systems when implementing the required changes.

c. 220 CMR 101.06(2)(a)(1)

i. Comments

NGA supports the intent of adopting a "layers of protection" approach to prevent overpressure events, but argues the current language is overly challenging for operators to implement (NGA Supplemental Comments at 9). NGA suggests implementing the proposed enhancements would require major investments in regulator stations and a lengthy siting, procurement, and installation process (NGA Supplemental Comments at 9-12).

NGA recommends limiting the regulation to regulator stations which feed low-pressure distribution systems to optimize the safety value of overpressure protection

upgrades (NGA Supplemental Comments at 10-11). NGA also contends that implementation would impact operators' ability to comply with 220 CMR 101.06(2)(a)(12), which requires operators to verify that no section of the distribution system is operating over 90 percent of its Maximum Capacity (NGA Initial Comments at 3).

NGA proposes the following edits underlined in red font:

> 1. For regulator stations which feed low-pressure distribution systems or regulator stations with inlet pressure in excess of 125 psig, install ~~Install~~ one of the following in accordance with the regulator station investment plan timeframe:
>
> a. a "slam shut" device in the station including in applications where there is only worker-monitor pressure control, or
> b. a third regulator; or
> c. a full-capacity relief valve ~~immediately~~ downstream of the station only where a slam shut or third-regulator are not practicable.

(NGA Supplemental Comments at 19-20).

Unitil suggests the following language:

> a full-capacity relief valve immediately downstream of the station only where a slam shut or third-regulator are deemed not practicable by the Operator.

(Unitil Comments at 2).

ii. Analysis and Findings

For the same reasons stated above, the Department declines to limit the scope of the regulation to low-pressure distribution systems. The Department adopts these regulations with the intent of protecting entire distribution systems from overpressure events, which have occurred on both high-pressure and low-pressure systems. It is the Department's expectation

that operators will prioritize their low-pressure systems when implementing the required changes.

The Department disagrees with NGA's suggestion that the full-capacity relief valve should not be required "immediately" downstream of the station. Any pipe installed between the station and the relief valve would not be adequately shielded by the secondary protection. If installation of a relief valve is precluded by the location of the station, the operator should utilize one of the other two overpressure protection methods set forth in 220 CMR 101.06(2)(a)(1).

The Department declines to adopt Unitil's proposed specification that the addition of a slam shut or third regulator must be deemed not practicable "by the [o]perator." The regulation is clear that the operator has discretion in selecting an overpressure device. The Department expects operators to provide justification any time a relief valve is utilized, however, instead of a slam shut or third regulator.

d. 220 CMR 101.06(2)(a)(2)

i. Comments

NGA notes its concern that operators will have difficulty completing telemetry installation within the proposed timeline (NGA Supplemental Comments at 12). It suggests that these upgrades would be best coordinated with each operator's risk-based regulator station investment program and performed in concert with regulator station upgrades (NGA Supplemental Comments at 12). NGA proposes the following language:

> Within ten years of the effective date of 220 CMR 101.00, operators shall install ~~Install~~ and employ telemetered pressure recordings at Pressure Limiting

> and Regulating Stations in order to signal failures immediately to operators at control centers. The telemetering pressure gauge shall be installed as close as practicable to ~~at~~ the outlet of each Pressure Limiting and ~~Pressure~~ Regulating Station;

(NGA Supplemental Comments at 20).

Eversource supports the use of telemetry systems for monitoring natural gas distribution networks and agrees with the requirements as proposed in the regulation. Eversource expresses concerns over the two-year timeline, noting the work involved in designing, acquiring, installing, and testing such telemetry systems could rush implementation and result in unintended consequences "such as a focus on speed over optimizing the details to ensure a safe and reliable system, or constraints on the finite number of resources available to complete the program" (Eversource Comments at 3).

ii. Analysis and Findings

For the same reasons as above, the Department declines to extend the implementation deadline to ten years but agrees to change the timeline from "two years of the effective date" to "three years of the effective date." Final Regulations, 220 CMR 101.06(2)(a)(2). The Department recognizes the challenges operators will face in implementing these requirements but agrees with the Attorney General that the proposed timelines are consistent with the MFS Standards, PSMS, industry best practices, and recommendations in the Dynamic Risk Report. The Department adopts NGA's proposal that the telemetering pressure gauge shall be installed "as close as practicable to" the outlet of each Pressure Limiting and Pressure Regulating Station as opposed to "at the outlet." Final Regulations, 220 CMR 101.06(2)(a)(2).

e. 220 CMR 101.06(2)(a)(3)

i. Comments

NGA recommends that the general term "control line" be replaced with the more specific "sensing line" which, if damaged, would result in an overpressurization (NGA Supplemental Comments at 12-13). NGA requests that the implementation timeframe to map these lines be extended to ten years given the number of regulator stations and the process required to accurately map them (NGA Supplemental Comments at 13). NGA suggests the following language:

> Within ten years of the effective date of 220 CMR 101.00, operators shall completely ~~Completely~~ and accurately locate, map, and document the location of all pressure limiting and regulating ~~control (i.e.,~~ sensing lines within the system, where the sensing line location is not already documented. The ~~control line~~ mapping shall include, but not be limited to, the line size, depth, length, material and distance of each line from reference points;

(NGA Supplemental Comments at 20).

ii. Analysis and Findings

The Department adopts the suggestion that "control lines" be changed to the more specific "sensing lines." Final Regulations, 220 CMR 101.06(2)(a)(3). The Department declines to remove the word "Completely" from the requirement that the lines be mapped but clarifies that this requirement applies to sensing lines that do not already have a location documented. As stated above, the Department declines to extend the implementation deadline to ten years and similarly imposes a three-year deadline. Final Regulations, 220 CMR 101.06(2)(a)(3).

f. 220 CMR 101.06(2)(a)(4)

i. Comments

Consistent with 220 CMR 101.06(2)(a)(3), NGA recommends that the term "control line" be replaced with "sensing line" (NGA Supplemental Comments at 12-13). NGA also suggests amending the language to allow for other methods of protecting the sensing lines other than plating them (NGA Supplemental Comments at 13-14). NGA recommends that the regulation clarify that such protection is required only for sensing lines that extend beyond five feet from the exterior of the vault because they are not inherently protected by the vault structure (NGA Supplemental Comments at 13). NGA also requests that the implementation timeframe to protect the lines extend to ten years given the number of regulator stations and the process required to complete the work (NGA Supplemental Comments at 12-14). NGA suggests the following language:

> Within ten years of the effective date of 220 CMR 101.00, operators shall ensure ~~Ensure~~ that all underground ~~control~~ sensing lines which extend beyond 5 feet from ~~not contained within the safety of~~ a Pressure Regulating Station vault or pit are provided with additional protection to prevent damage to the pipe by external forces. ~~Plated to protect from possible damage. The location, depth and size of the plates shall be mapped and documented as specified in 220 CMR 101.06(2)(a)(3~~);

(NGA Supplemental Comments at 20).

Eversource and Unitil suggest changes in 220 CMR 101.06(2)(a)(4) and propose linking the plating requirement to station rebuilds for efficient implementation (Eversource Comments at 3; Unitil Comments at 3). Eversource also recommends requiring plating only in public areas, where control lines are less secure and prone to excavation risks (Eversource Comments at 3). Eversource recommends the regulation read as follows:

> When a Pressure Regulating Station is constructed or rebuilt, ensure that all underground control lines, located in the public way, not contained within the safety of a Pressure Regulating Station vault or pit, and where are greater than 3-feet from the vault are plated to protect from possible damage.
>
> (Eversource Comments at 3).

Unitil suggests language similar to Eversource's language:

> When a Pressure Regulating Station is constructed or rebuilt, ensure that all underground control lines not contained within the safety of a Pressure Regulating Station vault or pit are plated to protect from possible damage.
>
> (Unitil Comments at 3).

National Grid shares similar concerns, suggesting that 220 CMR 101.06(2)(a)(4) only apply to underground control lines that run more than five feet from the vault itself and recommends changing the language to read:

> Ensure that all control lines not contained within a Pressure Regulating Station vault or pit, and that run more than 5 feet away from the vault or pit, are provided with additional protection to prevent damage to the pipe by external forces.
>
> (National Grid Comments at 3).

At the technical session on April 27, 2023, Eversource and National Grid restated this position and noted that installing plates closer than three to five feet from the vault could block access to valves.

ii. Analysis and Findings

Consistent with our earlier finding, the Department approves replacing the general term "control line" with the more specific term "sensing line." Final Regulations, 220 CMR 101.06(2)(a)(4). The Department agrees that only underground sensing lines outside of the pit require plating, and specifically requires all sensing lines three feet from a

vault or pit be plated. Final Regulations, 220 CMR 101.06(2)(a)(4). Although some operators propose limiting plating to sensing lines five feet from a vault or pit, the Department finds that three feet is sufficient distance to allow access to the vault or pit while ensuring maximum protection for the underground sensing lines. The Department finds that plating is the safest means of protection for sensing lines and rejects the proposal that the word "plating" be substituted with "additional protection." The regulation requires that the location and type of protection, including the type and size of the plating, be mapped and documented. Final Regulations, 220 CMR 101.06(2)(a)(4).

g. 220 CMR 101.06(2)(a)(5)

i. Comments

NGA suggests 220 CMR 101.06(2)(a)(1-4) be separated into a subcategory from 220 CMR 101.06(2)(a)(5-13) based on NGA's proposed completion timeframes (NGA Supplemental Comments at 19-21). NGA suggests the following language for 220 CMR 101.06(2)(a)(5):

> Ensure that all aboveground ~~control~~ sensing lines for pressure limiting and pressure regulating stations are secured by the installation of a fence or protective enclosure

(NGA Supplemental Comments at 20).

ii. Analysis and Findings

The Department declines to adopt NGA's proposed timeline for the reasons stated above but agrees to extend the implementation timeline for all of 220 CMR 101.06(2)(a) requirements to three years. This will allow operators time to update their facilities. The Department changes "control lines" to "sensing lines" for the reasons previously stated. The

Department further clarifies that the regulation applies to sensing lines "for Pressure Regulating Stations." 220 CMR 101.06(2)(a)(5).

h. 220 CMR 101.06(2)(a)(6)

i. Comments

NGA recommends the regulation allow for more flexibility for the setpoint of each overpressure protection device based on the MAOP of the downstream distribution system (NGA Supplemental Comments at 14). NGA suggests that the regulation should incorporate and cite to 49 C.F.R. 192.201(a). It asserts that this approach is supported by PHMSA Interpretation Response #PI-19-0019 (NGA Supplemental Comments at 15). NGA proposes the following changes:

> Ensure that all worker (i.e., controlling) regulators are ~~overpressure protection is~~ set below MAOP of the downstream system and that all overpressure protection is set as follows: ~~with the exception of the devices mandated by 220 CMR 101.06(2)(a)(1) which may be set at MAOP;~~
>
> > a. For low-pressure distribution systems, overpressure protection must be set to prevent the unsafe operation of any connected and properly adjusted gas utilization equipment in accordance with 49 CFR 192.201(a)(1).
> >
> > b. For pipelines other than low-pressure distribution systems, overpressure protection must be set to comply with 49 CFR 192.201(a)(2)
> >
> > (NGA Supplemental Comments at 20-21).

Eversource notes concerns in 220 CMR 101.06(2)(a)(6), requiring under-pressure shutoff devices to bet set at MOAP, specifically in cases where operational adjustments are needed during extreme weather conditions. Eversource recommends allowing flexibility in

setting overpressure protection devices to align with federal regulations outlined in 49 C.F.R. § 192.201(a) (Eversource Comments at 5). Eversource proposes the following language:

> 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 at ~~MAOP~~ a pressure consistent with the requirements of 49 CFR § 192.201(a).
>
> (Eversource Comments at 5).

Similarly, National Grid and Unitil suggest this regulation be amended to recognize the allowable build-up set forth in 49 C.F.R. § 192.201, which was recently reinforced by PHMSA's interpretation PI-19-0019 (National Grid Comments at 3, Unitil Comments at 3). National Grid recommends replacing the last "MAOP" with "within limits defined by 49 CFR § 192.201(a)" (National Grid Comments at 4). Unitil recommends a similar change in language:

> 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 at ~~MAOP~~ a pressure consistent with the requirements of 49 CFR § 192.201(a)
>
> (Unitil Comments at 3).

At the technical session on April 27, 2023, Berkshire, Eversource, Middleborough, National Grid, and Unitil all raised concerns about MAOP setpoints, noting that the regulations could have unintended consequences, especially in the winter.

ii. Analysis and Findings

The Department adopts the proposal that all overpressure protection be set "at or below" MAOP. The Department also agrees to specify that the devices required by

220 CMR 101.06(2)(a)(1) may be set in accordance with 49 C.F.R. § 192.201(a). Final Regulations, 220 CMR 101.06(2)(a)(6).

i. 220 CMR 101.06(2)(a)(7)

There were no comments on the proposed 220 CMR 101.06(2)(a)(7). The Department adopts its proposed language. Final Regulations, 220 CMR 101.06(2)(a)(7).

j. 220 CMR 101.06(2)(a)(8)

i. Comments

NGA suggests the following change:

> Ensure that all coated steel control lines are cathodically protected in compliance with 49 CFR 192.463.

(NGA Supplemental Comments at 21).

ii. Analysis and Findings

The Department declines to adopt NGA's proposed specification that only "coated" steel lines be cathodically protected. In the interest of safety, the regulation requires that all steel control lines be cathodically protected. Final Regulations, 220 CMR 101.06(2)(a)(8).

k. 220 CMR 101.06(2)(a)(9)

i. Comments

NGA proposes the following language:

> Maintain a list of critical valves and Pressure Limiting and Regulating Station isolations. The list shall be readily available for all personnel that would need to operate these valves. To the extent that information is available, the ~~The~~ list shall contain the number of turns needed to operate each valve and the direction the valve must be rotated to close it.

(NGA Supplemental Comments at 21).

ii. Analysis and Findings

For clarity, the Department amends this language to require that operators maintain a list of critical valves "for the isolation of Pressure Limiting Stations and Pressure Regulating Stations." Final Regulations, 220 CMR 101.06(2)(a)(9). The Department declines to adopt NGA's qualifying language "to the extent that information is available." Final Regulations, 220 CMR 101.06(2)(a)(9).

l. 220 CMR 101.06(2)(a)(10)

i. Comments

The Attorney General recommends the addition of language requiring operators to certify that critical valves are operable during each inspection (Attorney General Reply Comments at 8). The Attorney General proposes the following language:

> Establish a procedure for checking the operability of critical valves in the operator's system. The procedure shall require that critical valves be checked and confirmed operable once every calendar year at intervals not exceeding 15 months
>
> (Attorney General Reply Comments at 8).

ii. Analysis and Findings

The Department agrees with the Attorney General that critical valves must be confirmed to be operable when they are inspected. The Department adopts language stating that operators shall establish a procedure for "confirming the operability of critical valves" in the operator's system. Final Regulations, 220 CMR 101.06(2)(a)(10). The procedure shall require that personnel who operate critical valves "consult the list of critical valves" and check them each year. Final Regulations, 220 CMR 101.06(2)(a)(10).

m. 220 CMR 101.06(2)(a)(11)

There were no comments on the proposed language in 220 CMR 101.06(2)(a)(11). The Department makes minor changes for clarity and adopts its proposed language. Final Regulations, 220 CMR 101.06(2)(a)(11).

n. 220 CMR 101.06(2)(a)(12)

i. Comments

Eversource suggests 220 CMR 101.06(2)(a)(12) is unclear as written and proposes reviewing design capacity at gate and regulator stations rather than the entire system (Eversource Comments at 5-6). Unitil claims that this section is unclear if it applies to only stations, distribution systems, or both and recommends a discussion (Unitil Comments at 9). Eversource recommends filing annual reports with the Department by March 15 detailing gate and regulator station capacities, and contacting the Department if any section exceeds 90 percent of its maximum capacity (Eversource Comments at 5-6). Eversource recommends rewriting the section as follows:

> Annually on or before March 15, review ~~Review~~ and verify that no ~~section of the distribution system~~ gate station or regulator station is operating at above 90% of its maximum design capacity. Operators shall file their report of gate and regulator station operation with ~~contact~~ the Department ~~if any section is found to exceed 90% of its maximum capacity~~

(Eversource Comments at 6).

At the technical session on April 27, 2023, operators requested clarification on whether the regulation seeks to verify that no regulator station operates above 90 percent of its maximum capacity. NGA notes this determination of regulator station capacity may be

accomplished by either direct measurement or hydraulic modeling (NGA Supplemental Comments at 15). NGA agrees with the regulation but proposes the following clarifying language:

> Review and verify that no regulator station ~~section of the distribution system~~ is operating above 90% of its maximum capacity. Operators shall contact the Division if any regulator station ~~section~~ is found to exceed 90% of its maximum capacity; and

(NGA Supplemental Comments at 21).

ii. Analysis and Findings

The Department amends "section of the distribution system" to "Pressure Limiting Station or Pressure Regulating Station." Final Regulations, 220 CMR 101.06(2)(a)(12). This change clarifies that pressure limiting and regulating stations shall not operate above 90 percent maximum capacity.

o. 220 CMR 101.06(2)(a)(13)

There were no comments on the proposed 220 CMR 101.06(2)(a)(13). The Department adopts its proposed language. Final Regulations, 220 CMR 101.06(2)(a)(13).

p. 220 CMR 101.06(2)(b)

i. Comments

NGA raises concerns that the regulation could have the effect of making the timely performance of necessary maintenance contingent on facility upgrades (NGA Supplemental Comments at 16). NGA proposes that operators utilize the same risk-based approach it recommends in the previous section (NGA Supplemental Comments at 16). NGA alleges that

installing sensing lines inside the vault may result in pressure anomalies (NGA Supplemental Comments at 16). NGA makes the following suggestions:

> All maintenance activities on Pressure Limiting and Regulating Stations shall include the following:
>
> 1. Any underground ~~control~~ sensing lines undergoing maintenance shall be mapped, documented, and ~~relocated to the safety of a Pressure Regulating Station vault or pit. If the relocation of the control lines is not possible, the operator shall repair or replace the leaking segment of a control line and ensure that all control lines are plated~~ protected as specified by 220 CMR 101.06(2)(a)~~)(4)~~.
>
> 2. If any major maintenance (i.e., station reconfiguration ~~valve replacement~~) is to take place, the Pressure Regulating Station risk ranking and investment plan as defined in ~~is to be updated to comply with~~ 220 CMR 101.06(2)(a) shall be reviewed and updated.
>
> (NGA Supplemental Comments at 21).

At the technical session on April 27, 2023, Berkshire, Eversource, and Liberty all raised concerns that, as written, 220 CMR 101.06(2)(b)(1) would require operators to act against manufacturers' recommendations. Eversource suggests changes to 220 CMR 101.06(2)(b)(1) regarding control line maintenance in natural gas systems (Eversource Comments at 6). Eversource recommends allowing operators to connect control lines to the main, leading to better regulator performance and easier pressure management (Eversource Comments at 6). Eversource suggests operators have flexibility to choose the most effective protection method for each case, either relocating control lines to a vault or pit or repairing or replacement leaking segments and plating control lines (Eversource Comments at 6). Eversource recommends the following language:

> Any underground control lines undergoing maintenance shall either be relocated to ~~the safety of~~ a Pressure Regulating Station vault or pit, or where practical, ~~. If the~~

> ~~relocation of the control lines is not possible,~~ the operator shall repair or replace the leaking segment of a control line and ensure that all control lines are plated as specified by 220 CMR 101.06(2)(a)(4).
>
> (Eversource Comments at 6).

National Grid notes that regulator manufacturers recommend that the control lines be tapped some distance downstream of the regulator to provide smoother control to the device and prevent pressure fluctuations (National Grid Comments at 4). It also raises concerns that the regulation would impede the ability to site new and replacement stations (National Grid Comments at 4). It suggests that underground control lines be allowed to tap from the point on the system where they are best designed through detailed engineering analysis and, in cases where they run more than five feet from the vault structure, are protected as required under 220 CMR 101.06(2)(a)(4) (National Grid Comments at 4).

Eversource disagrees with the example of major maintenance in 220 CMR 101.06(2)(b)(2) and recommends changing the language to reflect major maintenance as synonymous with station replacement or rebuild (Eversource Comments at 6-7). Eversource proposes the following language:

> If any major maintenance (~~i.e~~e.g., ~~valve replacement~~ station rebuild) is to take place, the Pressure Regulating Station is to be updated to comply with 220 CMR 101.06(2)(a).
>
> (Eversource Comments at 6-7).

National Grid agrees with Eversource in further defining "major maintenance" or alternatively suggests that operators determine company-specific plans to bring stations into compliance (National Grid Comments at 4). Unitil suggests this section be eliminated

because completing updates to Pressure Regulating systems pursuant to 220 CMR 101.06(2)(a), in addition to major maintenance, could expand the scope of planned work and have unintended consequences of delaying completion of major maintenance (Unitil Comments at 3-4). Eversource, National Grid, and Unitil also expressed similar concerns at the technical session on April 27, 2023.

ii. Analysis and Findings

The Department adopts NGA's proposal to change the term "control line" to "sensing line" for the reasons stated above. The Department declines to strike language stating that underground sensing lines undergoing maintenance shall be relocated to the safety of a Pressure Regulating Station vault or pit. This provision ensures the sensing lines will be protected from all damages. Final Regulations, 220 CMR 101.06(2)(b)(1). The Department recognizes the concerns that operators have with the proposed regulation tying major maintenance to regulator station updates could have the effect of delaying necessary maintenance activity. The Department adopts language narrowing the scope of major maintenance and changes the "valve replacement" example to "station reconfiguration." Final Regulations, 220 CMR 101.06(2)(b)(2).

q. 220 CMR 101.06(2)(c)(1)

i. Comments

During the technical session on April 27, 2023, operators questioned whether the term "monitor" was intended to include both "wide-open monitor" and "working monitor" configurations. NGA proposes the following language to clarify its recommendations:

> Be designed ~~in a~~ with two regulators in series utilizing a "control" or "working" regulator and a "monitor" (wide-open or working monitor) for the first level of overpressure protection; ~~worker-monitor style.~~
>
> (NGA Supplemental Comments at 22).

ii. Analysis and Findings

The Department strikes language requiring that new Pressure Regulating Stations be "designed in a worker monitor style," and instead clarifies its expectation that the stations 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." Final Regulations, 220 CMR 101.06(2)(c)(1).

r. 220 CMR 101.06(2)(c)(2)

i. Comments

During the technical session on April 27, 2023, several operators raised concern about whether these measures constitute a "second" or "third" level of overpressure protection. NGA proposes the following language:

> Include a second ~~third~~ level of overpressure protection as per 49 CFR 192.201 such as a "slam shut", ~~or~~ additional monitor regulator, or a full-capacity relief valve where a "slam shut" or additional monitor regulator is not practical
>
> (NGA Supplemental Comments at 16, 22).

National Grid suggests that 220 CMR 101.06(2)(c)(2) allow for a full capacity relief valve to align with 220 CMR 101.06(2)(a)(1)(c), and read:

> Include a third level of overpressure protection such as a "slam shut", a third regulator, or a full capacity relief valve immediately downstream of the station
>
> (National Grid Comments at 4).

ii. Analysis and Findings

The Department adopts the proposal changing "third level" of overpressure protection to "second level." Where the "first level" of overpressure protection is described in 220 CMR 101.06(2)(c)(1), it is more accurate to describe the additional device required here as a "second level." Final Regulations, 220 CMR 101.06(2)(c)(2).

The Department declines to adopt National Grid's proposal to add "a full capacity relief valve" to the list of suggested devices. The regulation, as written, does not exclude full-capacity relief valves as acceptable second levels of overpressure protection, but the Department notes that they should only be used where the other two listed devices are not practical.

s. 220 CMR 101.06(2)(c)(3)

i. Comments

NGA requests additional language permitting use of a strainer as an acceptable alternative to a filter. NGA proposes the following language:

> Include a filter or strainer installed upstream of each individual pressure limiting or regulating pipe run.

(NGA Supplemental Comments at 22).

Berkshire and Eversource made the same request at the technical session on April 27, 2023.

ii. Analysis and Findings

The Department adopts NGA's proposal to add "or strainer" as an alternative to a filter. The addition will give operators more flexibility while having the same desired safety effects. Final Regulations, 220 CMR 101.06(2)(c)(3).

t. 220 CMR 101.06(2)(c)(4)

i. Comments

NGA requests broadening this requirement to ensure adequate redundancy to protect against a single failure, rather than focus on the redundancy of each regulator run (NGA Supplemental Comments at 17). NGA proposes the following language:

> Be designed and installed with adequate redundancy to protect against a single failure ~~redundant parallel regulator piping run.~~
>
> (NGA Supplemental Comments at 22).

National Grid recommends 220 CMR 101.06(2)(c)(4) include more flexibility in how operators achieve redundancy levels that provide the same benefit to safety and reliability (National Grid Comments at 5). National Grid proposes the following language:

> Be designed and installed with adequate redundancy to negate the effects of a single failure.
>
> (National Grid Comments at 5).

At the technical session on April 27, 2023, Berkshire and National Grid made a similar proposal.

ii. Analysis and Findings

The Department adopts NGA's proposed language. Final Regulations, 220 CMR 101.06(2)(c)(4). By changing the language from requiring the installation of a "redundant parallel regulator piping run" to requiring "adequate redundancy to protect against a single failure," the operators will have flexibility to tailor these requirements to their own systems while still addressing the Department's safety concerns. Final Regulations, 220 CMR 101.06(2)(c)(4).

u. 220 CMR 101.06(2)(c)(5)

i. Comments

NGA raises concerns about locating sensing lines within the confines of the pressure regulator station which, it argues, conflicts with design standards (NGA Supplemental Comments at 17-18). NGA recommends the use of plates or other protective measures where there is no header or where sensing lines are greater than five feet from the vault (NGA Supplemental Comments at 17-18).

NGA proposes the following language:

> Be designed in a manner that limits sensing lines from extending beyond five feet from the Regulator Station vault ~~Have all control lines contained within the Pressure Limiting or Regulating Station vault or pit.~~

(NGA Supplemental Comments at 22).

Eversource recommends containing control lines in the Pressure Limiting or Regulating Station vault or pit, or plating them according to the specifications outlined in other regulations, writing 220 CMR 101.06(2)(c)(5) as follows:

> Have all control lines either contained within the Pressure Limiting or Regulating Station vault or pit or plated in accordance with 220 CMR 101.06(2)(a)(4) as specified in 220 CMR 101.06(2)(b)(1).

(Eversource Comments at 7).

Unitil comments that this regulation does not account for necessary exceptions such as space limitation in vaults and pits and recommends the following language:

> Have ~~all~~ control lines contained within the Pressure Limiting or Regulating Station vault or pit where it is reasonably feasible.

(Unitil Comments at 4).

ii. Analysis and Findings

The Department adopts NGA's suggestion, in part, but limits the distance sensing lines may extend from the vault to three feet instead of five feet. Final Regulations, 220 CMR 101.06(2)(c)(5). This compromise takes into account design standards while ensuring that sensing lines are maximally protected.

v. 220 CMR 101.06(2)(c)(6)

i. Comments

NGA recommends terminating regulator vent lines above grade such that pressure control is not impacted by water intrusion into the vault or flooding (NGA Supplemental Comments at 18-19). NGA proposes the following language:

> Be designed such that all regulator atmospheric vent lines terminate above grade and be rain and insect resistant ~~Include a flooding indicator that alerts in the operator's control centers.~~

(NGA Supplemental Comments at 22).

Eversource and National Grid express concerns with 220 CMR 101.06(2)(c)(6) that flooding indicators in damp environments such as vaults and pits can cause premature failure, resulting in unsubstantiated alarms taking focus away from other issues (Eversource Comments at 7-8, National Grid Comments at 5). Several operators expressed similar concerns at the technical session on April 27, 2023.

National Grid expresses concerns with the provisions of 220 CMR 101.06(2)(c)(6) and 220 CMR 101.06(2)(c)(7). National Grid explains that gas within a vault is addressed by quarterly inspections in 220 CMR 101.06(2)(a)(11), the annual leak survey, and the testing of a vault's atmosphere prior to entry (National Grid Comments at 5). National Grid recommends striking sections 220 CMR 101.06(2)(c)(6) and 220 CMR 101.06(2)(c)(7) in their entirety as they do not provide additional safety benefits (National Grid Comments at 5).

ii. Analysis and Findings

The Department acknowledges Eversource and National Grid's concerns that the flooding indicator required by the proposed regulation could cause unsubstantiated alarms. The Department adopts NGA's suggestion to specify that the Pressure Limiting Station shall "[b]e designed to ensure all regulator atmospheric vent lines terminate aboveground and are rain and insect resistant." Final Regulations, 220 CMR 101.06(2)(c)(6). This alternative language addresses the Department's intended goal to protect pressure control from water intrusion.

w. 220 CMR 101.06(2)(c)(7)

i. Comments

At the April 27, 2023 technical session, Berkshire, Eversource, National Grid, Liberty, and Unitil expressed confusion regarding the intended scope of this regulation. NGA suggests language clarifying that gas detectors would be required in above-grade regulator stations located in buildings (NGA Supplemental Comments at 18-19). NGA proposes the following language:

> For above-grade regulator stations located inside of buildings, ~~Include~~ include a gas sensor that monitors for general leaks that alerts in the operator's control centers; and…

(NGA Supplemental Comments at 22).

Eversource expresses similar concerns with 220 CMR 101.06(2)(c)(7) regarding gas sensors. Eversource recommends the following language:

> For Pressure Limiting and Regulating Stations located aboveground, inside buildings, include a gas sensor that monitors for leaks that alerts in the operator's control centers

(Eversource Comments at 8).

Unitil recommends this section be modified to clearly designate the location of newly installed gas sensors:

> Include a gas sensor in vaults, pits, and buildings that monitors for general leaks that alerts in the operator's control centers

(Unitil Comments at 9).

ii. Analysis and Findings

The Department adds the qualifier proposed by NGA and limits the regulation to "aboveground Pressure Regulating Stations located inside of buildings." Final Regulations, 220 CMR 101.06(2)(c)(7). This change maintains the intended effects of the initial proposed regulation while limiting the scope of its application to the riskiest locations.

x. 220 CMR 101.06(2)(c)(8)

i. Comments

NGA suggests that it is not always possible to install telemetry at the regulator station itself because of siting requirements that require power and communications (NGA Supplemental Comments at 19). NGA proposes the following language:

> Include a telemetering pressure gauge installed in close proximity to ~~at~~ the outlet of each regulating station.

(NGA Supplemental Comments at 22).

At the technical session on April 27, 2023, Berkshire proposed qualifying the regulation by adding "as practicable."

ii. Analysis and Findings

The Department acknowledges it is not always possible to install telemetry at the outlet of each Pressure Regulating Station. We adopt language that the telemetering gauge must instead be installed "as close as practicable to the outlet." Final Regulations, 220 CMR 101.06(2)(c)(8).

3. Welders and Welding Operators Qualified Pursuant to 49 CFR 192.227(a), 220 CMR 101.06(3)

There were no comments on the proposed 220 CMR 101.06(3). The Department makes small changes for clarity. Final Regulations, 220 CMR 101.06(3).

4. Inspection and Test of Welds, 220 CMR 101.06(4)

There were no comments on the proposed 220 CMR 101.06(4). The Department makes small changes for clarity. Final Regulations, 220 CMR 101.06(4).

5. Protection from Hazards, 220 CMR 101.06(5)

There were no comments on the proposed 220 CMR 101.06(5). The Department makes small changes for clarity and adopts its proposed language. Final Regulations, 220 CMR 101.06(5).

6. Cover, 220 CMR 101.06(6)

There were no comments on the proposed 220 CMR 101.06(6). The Department makes a small change to 220 CMR 101.06(6)(b)(5)(b) to formalize the customary practice of operators including the year of the existing installation when reporting a shallow line discovery to the Department. Final Regulations, 220 CMR 101.06(6)(b)(5)(b). The Department also clarifies that the requirements of 220 CMR 101.06(6)(b)(5)(f) and (g) to apply to "transmission lines" as well as mains. Final Regulations, 220 CMR 101.06(6)(b)(5).

7. Meters & Regulators, 220 CMR 101.06(7)

a. 220 CMR 101.06(7)(b)(1)

i. Comments

NGA suggests the need for clarifying safety regulations for meter, service regulator, and vent proximity, but argues that the proposed regulation goes beyond what is suggested by the Climate Act, the NTSB Report, and the Dynamic Risk Report (NGA Supplemental Comments at 23). NGA proposes alternative rules based on industry studies and regulations from other states (NGA Supplemental Comments at 23-24). NGA also proposes risk-based mitigation measures in the event an installation cannot meet the requirements of the regulation (NGA Supplemental Comments at 24-25). NGA proposes the following language:

(b) Service Regulators:

1. Operators shall not install or operate a service regulator located within 12 inches to the side or 18 inches above and below any building opening; 3 feet in any direction from any exterior defined source of ignition; and 5 feet in any direction from any forced air intake. ~~within ten feet of a source of ignition or an air intake into a building. Utilities shall not install or operate a service regulator located within three feet from an opening into a building or any electrical source not intrinsically safe~~.

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; and

b. If the operator learns of a regulator that fails to meet the above ~~three or ten-foot~~ minimum distance requirements, it shall resolve the problem by extending the regulator vent to meet the requirement, installing an Over Pressure Shut Off (OPSO) device, installing a vent-less or vent limited gas service regulator, or implementing another operator-defined mitigating measure. ~~within 60 days of discovery~~. Operators shall be required to complete corrective action by the next scheduled mandated inspection cycle or in accordance with an Operator-defined remediation plan

(NGA Supplemental Comments at 26-27).

The LDCs submit several recommendations to 220 CMR 101.06(7) (LDCs Initial Comments at 7-8). The LDCs suggest revising the regulation to align with industry standards, requiring a three-foot to five-foot clearance from an ignition source and/or a forced air intake into a building. The LDCs also express concern about the 60-day cure period for regulator noncompliance (LDCs Initial Comments at 7-8). The LDCs alternatively propose that each operator conduct a risk assessment and submit a specific remediation plan for its systems (LDCs Initial Comments at 8). Lastly, the LDCs recommend adherence to manufacturer and service guidelines and cite concerns about potential disruptions to customer operations during service changes (LDCs Initial Comments at 8).

Unitil proposes modifications in 220 CMR 101.06(7)(b)(1), noting that there may be limited outside locations for meter set assembly installation (Unitil Comments at 4). Unitil suggests considering circumstances where risk mitigation can involve installing an overpressure shut-off device, eliminating gas venting (Unitil Comments at 4-5). Unitil recommends the following changes:

> Operators shall not install or operate a service regulator located within ~~ten~~ five feet of a source of ignition or an air intake into a building. Utilities shall not install or operate a service regulator located within three feet from an opening into a building unless an Over-Pressure Shut Off device can be installed or any electrical source not intrinsically safe.
>
> b. If the operator ~~learns of~~ identifies a regulator that fails to meet the three- or ten five-foot minimum distance requirement during a survey inspection, it shall resolve the problem by extending the regulator vent or by installing an Over-Pressure Shut Off device to meet the requirement within 60 days of discovery prior to completing the next survey cycle
>
> (Unitil Comments at 5).

At the technical session on April 27, 2023, National Grid and Unitil both noted that as written, the regulation goes above and beyond standard industry practice.

ii. Analysis and Findings

The Department recognizes that its proposed regulations go beyond industry and historical practices. It rejects the LDCs' alternative proposal that each operator conduct a risk assessment and submit a specific remediation plan for its system (LDCs Initial Comments at 8). The proposal is too vague and does not ensure immediate remediation. The Department adopts some of NGA's proposed language and shortens some of the distances from the initial proposed regulation:

> 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....
>
> > 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.

Final Regulations, 220 CMR 101.06(7)(b)(1).

As written, the new language grants exemptions for service regulators that utilize overpressure shutoff technology or otherwise effectively eliminate venting gas to the atmosphere. It also requires operators to take remedial action, without imposing a specific course of action, and grants them an additional 30 days to complete the remediation. The Department notes that leaving an identified hazard unaddressed creates a risk to public safety. These hazards should be addressed as soon as practicable, and in no event later than 90 days.

The Department finds that 90 days is a reasonable timeframe for operators to address a known safety risk. Final Regulations, 220 CMR 101.06(7)(b)(1).

b. 220 CMR 101.06(7)(b)(3) and (4)

i. Comments

NGA disputes the need for a seven-year cycle for service regulator maintenance. It proposes that operators sponsor a risk-based study to assess service regulator replacement frequency and incorporate the results into each operator's DIMP (NGA Supplemental Comments at 25). NGA also notes that operators utilize bypass meter bar technology which does not require piping to be purged (NGA Supplemental Comments at 26). NGA suggests the frequency of running lock-up and run tests should be determined through a risk assessment that also takes into account customer and environmental impacts (NGA Supplemental Comments at 26). NGA proposes the following language:

> ~~Each operator~~ Operators shall complete a risk-based engineering study to assess service regulator inspection, maintenance, and replacement frequency within 2 years of adoption of this rule. Results of the study shall be incorporated into an Operator's DIMP and be used to establish a service regulator maintenance ~~develop and implement a seven-year service regulator maintenance~~ program. ~~All service regulators shall be inspected during statutory meter changes every seven years, including a lock-up and run test, and maintained in accordance with manufacturers' specifications.~~
>
> ~~4. Service regulators on service lines without an excess flow valve (EFV) shall be replaced with meter replacement not to exceed seven years from installation~~

(NGA Supplemental Comments at 27).

Unitil notes that 220 CMR 101.06(7)(b)(3) proposes a seven-year service maintenance program, likely aligning with a seven-year meter replacement cycle required by G.L. c. 164,

§ 115A (Unitil Comments at 5). Unitil suggests that the maintenance cycle for regulators should be based on an objective, risk-based assessment specific to regulator devices, considering industry standards and manufacturer instructions (Unitil Comments at 5). Unitil recommends the Department mandate operators to develop a risk-based study to determine the suitable maintenance cycle for regulator devices (Unitil Comments at 5). Unitil makes similar comments to 220 CMR 101.06(7)(b)(4), suggesting the replacement cycle should be determined through a risk-based assessment, considering industry standards and manufacturer instructions, rather than on a fixed timeframe (Unitil Comments at 5-6). At the technical session on April 27, 2023, Eversource, National Grid, and Unitil all raised concerns that this regulation, as written, could be disruptive for customers.

ii. Analysis and Findings

The Department rejects NGA's proposal developing service regulator maintenance and inspection program after a risk assessment. The Department removes the seven-year time frame from the maintenance and inspection program requirement, instead requiring inspections during "any activation, reactivation, or statutory meter change under M.G.L. c. 164, § 115A." Final Regulations, 220 CMR 101.06(7)(b)(3). The new language ensures that the inspections will regularly occur when operators are completing other types of required maintenance activities.

8. Service Lines - Valve Requirements and Locations, 220 CMR 101.06(8)

There were no comments on the proposed 220 CMR 101.06(8). The Department adopts its proposed language. Final Regulations, 220 CMR 101.06(8).

9. Corrosion Control/Cathodic Protection - Remedial Actions Timeframe, 220 CMR 101.06(9)

There were no comments on the proposed 220 CMR 101.06(9). The Department makes small changes for clarity. Final Regulations, 220 CMR 101.06(9).

10. General Pipeline Pressure Test Requirements, 220 CMR 101.06(10)

a. Comments

Liberty recommends that the Department revise 220 CMR 101.06(10)(h)(1) changing the maximum length of a pre-tested pipe section from "12 feet" to "40 feet" to reflect the typical length of currently manufactured steel or plastic pipe (Liberty Comments at 2). NGA also suggests that the maximum length of pre-tested pipe sections be raised to 40 feet and proposes that the language be changed to state: "Pre-tested pipe sections shall be no more than 40 ~~12~~ feet in nominal length" (NGA Supplemental Comments at 28). NGA states that raising the minimum length "eliminates the need for segmenting a pipe length prior to pressure test and provides greater operational flexibility in responding to emergency situations that require the use of pre-tested pipe" (NGA Supplemental Comments at 27-28).

Liberty also raises concerns about 220 CMR 101.06(10)(h)(8), which prohibits the use of "intermediate joints" on pre-tested pipe used in a main (Liberty Comments at 3). Liberty anticipates this restriction will become problematic when operators replace leaking three-way t-type connectors. It notes that "it would be impracticable to comply with this proposed regulation and pre-test a three-way tee at once because at minimum, three intermediate joints would be required to replace a hypothetical leaking three-way cast iron tee" (Liberty Comments at 3). Liberty recommends that this subsection be deleted in its entirety or, in the

alternative, revised to read, "intermediate joints on the section of pre-tested pipe must be included in the air test rather than tested using a soap test" (Liberty Comments at 3).

b. Analysis and Findings

The Department rejects the request to raise the maximum length of pre-tested pipe segments from 12 to 40 feet. Final Regulations 220 CMR 101.06(10)(h)(1). The Department acknowledges the need for pre-tested pipe to make short repairs and finds that 12 feet is an appropriate length to achieve that outcome. Longer segments of pipe should be pressure tested in place in the interest of safety. The Department also rejects Liberty's proposal that it remove 220 CMR 101.06(10)(h)(8). The Department notes that operators can request an exception to the provision in accordance with 220 CMR 101.03 under specific circumstances, such as the situation outlined by Liberty.

11. Pressure Test Requirements for Pipelines to Operate at a Hoop Stress of Less Than 30% of SMYS and at or Above 100 psig, 220 CMR 101.06(11)

There were no comments on the proposed 220 CMR 101.06(11). The Department adopts its proposed language. Final Regulations, 220 CMR 101.06(11).

12. Pressure Test Requirements for Pipelines to Operate Below 100 psig, 220 CMR 101.06(12)

There were no comments on the proposed 220 CMR 101.06(12). The Department adopts its proposed language. Final Regulations, 220 CMR 101.06(12).

13. Pressure Test Requirements for Service Lines, 220 CMR 101.06(13)

There were no comments on the proposed 220 CMR 101.06(13). The Department adopts its proposed language. Final Regulations, 220 CMR 101.06(13).

14. Pressure Test Requirements for Plastic Pipelines, 220 CMR 101.06(14)

There were no comments on the proposed 220 CMR 101.06(14). The Department adopts its proposed language. Final Regulations, 220 CMR 101.06(14).

15. Operating Pressures for Low-pressure Distribution Systems, 220 CMR 101.06(15)

a. Comments

Eversource contends that 220 CMR 101.06(15)(b) does not clearly indicate the intended improvement to safety, reliability, and system integrity (Eversource Comments at 8). Eversource states that this regulation should specify applicability only to low-pressure systems (Eversource Comments at 8). Eversource also argues it is not clear how to quantify or validate the "normal pressure" (Eversource Comments at 8). Eversource states that 49 C.F.R. § 192.623(b) provides an MAOP threshold that is adequately detailed for existing system operation (Eversource Comments at 8).

NGA and the LDCs recommend revising the proposed regulation from "the MAOP of low-pressure distribution systems shall be 14 inches water column" to "the MAOP of low-pressure distribution systems shall ~~be~~ not exceed 14 inches water column" (LDCs Initial Comments at 8; NGA Supplemental Comments at 28). The LDCs note that their distribution systems would need to be significantly updated to achieve exactly 14 inches water column, which is not the industry standard. In fact, several of the LDCs have low-pressure distribution systems lower than 14 inches water column (LDCs Initial Comments at 8).

NGA also proposes changes to 220 CMR 101.06(15)(b), arguing that the proposed regulation does not clearly indicate the intended improvement to safety, reliability, and system integrity (NGA Supplemental Comments at 29). It proposes the following language:

> (b) Minimum operating pressure. For low-pressure service, the delivery pressure to the customer shall not normally be less than one-half of the standard delivery pressure. ~~The pressure at the outlet of any customer's service meter shall not normally be less than one-half of the normal pressure at the outlet as recorded during the course of the year.~~

(NGA Supplemental Comments at 29).

b. Analysis and Findings

The Department agrees with NGA and adopts its proposed language for 220 CMR 101.06(15)(a) and 220 CMR 101.06(15)(b). Final Regulations, 220 CMR 101.06(15). NGA's proposed language provides a practical alternative which would ensure the same results as the initially proposed regulation.

16. Odorization of Gas, 220 CMR 101.06(16)

There were no comments on the proposed 220 CMR 101.06(16). The Department made small changes for clarity. Final Regulations, 220 CMR 101.06(16).

17. Distribution Systems: Leakage Surveys and Procedures, 220 CMR 101.06(17)

a. Comments

Unitil comments that the terms (e.g., factory, rehabilitation center) in this section are broad and imprecise, which could make compliance challenging (Unitil Comments at 9).

b. Analysis and Findings

The Department disagrees with Unitil that the terms in this section are broad or imprecise. The Department makes small changes for clarity. Final Regulations, 220 CMR 101.06(17).

18. Pressure Test Requirements for Reinstating Service Lines, 220 CMR 101.06(18)

There were no comments on the proposed 220 CMR 101.06(18). The Department makes small changes for clarity. Final Regulations, 220 CMR 101.06(18).

19. Operator Qualifications, 220 CMR 101.06(19)

a. Comments

NGA and others generally support the changes associated with 220 CMR101.06(19), but raise some concerns surrounding 220 CMR 101.06(19)(c) and (d) (NGA Initial Comments at 6; Liberty Comments at 3; Unitil Comments at 6; LDCs Initial Comments at 9; NGA Supplemental Comments at 31). NGA states the proposed regulation may have the unintended consequence of limiting development of skills and experience needed to ensure a competent workforce (NGA Initial Comments at 6).

As to 220 CMR 101.06(19)(c), NGA suggests that the Department seeks to eliminate "span of control" (on-the-job) training and require utilities to implement an approach where personnel must demonstrate competency in the classroom before they are qualified to perform work in the field (NGA Supplemental Comments at 31). NGA emphasizes that on-the-job training is essential as many skills (e.g., Dig Safe markouts) cannot be acquired by classroom learning alone (NGA Supplemental Comments at 32). From a practical standpoint, NGA

reports there are numerous small operators in the state that would not be able to comply with this requirement as they do not have sufficient resources to fully qualify and train all personnel on all covered tasks (NGA Supplemental Comments at 32).

NGA recommends incorporating additional clarifying language in 220 CMR 101.06(19)(c) to enable on-the-job training to continue and allow for an individual to perform covered task functions if directed and observed by a fully qualified individual consistent with 49 C.F.R. § 192.805(c) (NGA Initial Comments at 6, NGA Supplemental Comments at 35). NGA proposes the following language:

> (c) All individuals who perform OQ covered tasks shall be qualified in all the OQ covered tasks that they perform or, if they are not qualified to perform the OQ-covered task, shall perform such tasks under the direction and observation of an individual who is qualified with a span-of-control ratio of no more than one qualified individual to one non-qualified individual (1:1 ratio).

(NGA Supplemental Comments at 35).

NGA and others express concerns with the proposal for 220 CMR 101.06(19)(d). NGA states that while the proposed intent of 220 CMR 101.06(19)(d) is to ensure competency of those inspecting or supervising work, the inspector or supervisory role does not require the skill or physical ability to execute tasks, and thus does not require full Operator Qualification ("OQ") credentials (NGA Initial Comments at 7). To be an effective supervisor, NGA emphasizes that knowledge of the task being overseen is essential rather than the skill and ability to perform the task itself (NGA Supplemental Comments at 34). NGA proposes the following language:

> (d) Individuals who are responsible for inspection or field supervision of those performing OQ covered tasks shall be ~~qualified~~ knowledgeable and competent in

> all the OQ covered tasks for which they are responsible. Operators shall define within their OQ Written Plans the knowledge and competency requirements for individuals responsible for inspecting or supervising those performing OQ covered tasks.
>
> (NGA Supplemental Comments at 35).

Liberty raises similar concerns as NGA and asserts that the scope of the regulation together with the one-year implementation deadline will disproportionately affect smaller utilities at which supervisors and inspectors have a broader range of responsibilities than others at larger LDCs (Liberty Comments at 3). Liberty notes an issue with the practicability of smaller utilities to scale up staffing at a rate that would achieve compliance with the one-year deadline (Liberty Comments at 3).

Unitil recommends modifying 220 CMR 101.06(19)(d) to make it clear that it applies only to individuals who are responsible for inspection or supervision of OQ covered tasks in the field (Unitil Comments at 6). Unitil recommends the regulation be rewritten as:

> Individuals who are responsible for inspection or supervision in the field of those performing OQ covered tasks shall be qualified in all the OQ covered tasks for which they are responsible or are able to demonstrate competency through other means defined by the Operator (e.g., an Inspector/Supervisor test).
>
> (Unitil Comments at 6).

The LDCs reiterate the concerns raised by the NGA relative to written OQ programs. The LDCs comment that the proposed regulation creates significant OQ impacts with little safety value and the changes will likely result in unjustifiable burdens on the LDCs stemming from union and contractor negotiations (LDCs Initial Comments at 9).

Finally, the Attorney General supports the Department's proposal. The Attorney General notes that in the preamble to its OQ regulations, PHMSA did not intend MFS Standards § 192.805(c) to apply only to OQ "training" (Attorney General Supplemental Reply Comments at 5). To the extent that any provision of 220 CMR § 101.00 conflicts with any provision of the MFS Standards that PHMSA may eventually enact, "the more stringent provision prevails" (Attorney General Reply Comments at 6, citing 220 CMR 101.01 – Compliance with MFS Standards). The Attorney General recommends adding further language to support the Department's prior findings.

> (c) All individuals who perform OQ covered tasks shall be qualified in all the OQ covered tasks that they perform and have the necessary knowledge and skill to ensure the safe operation of pipeline facilities.
>
> (Attorney General Reply Comments at 7-8; Attorney General Supplemental Reply Comments at 7-8).

b. Analysis and Findings

As a preliminary matter, we reject the assertion that these regulations are in conflict with 49 C.F.R. § 192.805(c). As noted by the Attorney General, the Department's regulations can be more stringent than MFS Standards. To the extent that any provision of 220 CMR 101.00 conflicts with any provision of the MFS Standards that PHMSA may eventually enact, "the more stringent provision prevails." 220 CMR 101.01. The Department is within its legal authority to enact more stringent regulations.

The Department further disagrees with the assertion these proposed regulations will work to limit the skill and competency of the workforce. These changes will have the exact

opposite effect, ensuring that the workforce, and those supervising them, have the requisite training, skills, and knowledge to perform tasks and ensure safer operation across all OQ covered tasks. In its statewide audit of the natural gas distribution system, the Dynamic Risk Report recommended the industry pay closer attention to OQs. Specifically, the Dynamic Risk Report recommended that OQ programs must evolve to not just certify gas personnel, but to confirm they are fully qualified and competent to understand the hazards of the work and perform it safely (Dynamic Risk Report, Phase II at 86). As the Attorney General stated, the Department has had reason to conclude that historically operators were not ensuring gas personnel were fully trained or have the necessary knowledge and skills to perform the work and perform it safely (Attorney General Reply Comments at 7). The intent of 220 CMR 101.06(19) is to ensure individuals performing covered tasks are able to pass the basic evaluations of those tasks in a classroom setting prior to performing the same covered tasks on real gas distribution and transmission systems. We agree this does not replace the need for on-the-job training but emphasize the need to ensure a baseline level of knowledge before performing Gas Work. Individuals performing covered tasks and those supervising them must be knowledgeable in the specific task. This ensures that the knowledge and skill will be fully developed. For those reasons, the Department declines to adopt the language proposed by the commenters. Final Regulations, 220 CMR 101.06(19).

20. Identifying Threats and Ranking Risk, 220 CMR 101.06(20)

There were no comments on the proposed 220 CMR 101.06(20). The Department makes changes for clarity and grammar. Final Regulations, 220 CMR 101.06(20).

21. Remote Read Meter, 220 CMR 101.06(21)

There were no comments on the proposed 220 CMR 101.06(21). The Department adopts its proposed language. Final Regulations, 220 CMR 101.06(21).

22. MAOP, 220 CMR 101.06(22)

a. Comments

At the technical session on April 27, 2023, Berkshire and Unitil expressed concern that posting MAOP information for general public access may result in increased security risk of those facilities. The LDCs, along with NGA and Unitil, express concerns regarding the requirement to publicly post MAOP information at multiple sites (LDCs Initial Comments at 8-9; NGA Initial Comments at 7; Unitil Comments at 6). They emphasize the potential risks to safety and security, the substantial financial burden, and the lack of significant advantages (NGA Supplemental Comments at 35-35; LDCs Initial Comments at 8-9; Unitil Comments at 6). Instead, they propose providing this information in a secure format accessible to technicians, contingent upon the Department's discretion. Both NGA and Unitil underscore the importance of restricting public access to MAOP information and advocate for its availability in secure locations (NGA Supplemental Comments at 35-36; Unitil Comments at 6). NGA proposes the following clarifying language:

> MAOP shall be readily available for all personnel who would need to operate or maintain ~~posted at~~ gate and district regulator stations as well as service regulators.
>
> (NGA Supplemental Comments at 36).

b. Analysis and Findings

The Department agrees that MAOP only needs to be posted for operating personnel and not the general public. It amends the proposed language to say that MAOP shall be posted within Pressure Regulating Stations and at service regulators. Final Regulations, 220 CMR 101.06(22).

23. Abandonment of Valves, 220 CMR 101.06(23)

a. Comments

In its initial Comments, National Grid asks whether the valve box referenced in 220 CMR 101.06(23)(b) must be filled with crushed stone. It suggests that another suitable material such as soil could be used (National Grid Comments at Page 7).

b. Analysis and Findings

The Department affirms that crushed stone must be used to fill the valve box when abandoning valves. The Department makes small changes for clarity. Final Regulations, 220 CMR 101.06(23).

D. Oversight of Contractors, 220 CMR 101.07

1. 220 CMR 101.07(1)

a. Comments

The Department received a number of comments on the initially proposed 220 CMR 101.07(1), which requires Contractors who seek to perform Gas Work register with the Department and provide documentation to meet certification requirements (NGA Supplemental Comments at 37). To meet the statutory requirement of the Climate Act, the Department proposes definitions of "Contractor" and "Gas Work." NGA acknowledges that

the Department drafted 220 CMR 101.07 to comply with the following provision of the Climate Act:

> Contractors who wish to be eligible to receive contracts with a gas company to perform gas work shall be required to register with the department and provide all required documentation to meet certification requirements, as set by the department, to the department on an annual basis.
>
> St. 2021, c. 8 § 103 (NGA Supplemental Comments at 37).

NGA correctly points out that the term "Gas Work" is not defined in the Climate Act (NGA Supplemental Comments at 37). NGA recommends changing the proposed definition of "Gas Work" as the proposed definition would lead to results that are "unreasonable and of little practical value" (NGA Supplemental Comments at 37-38). NGA contends that the definition of "Gas Work" is so broad that it would require Contractors performing activities not directly related to the distribution of natural gas such as landscaping work or fence repair to register annually with the Department (NGA Supplemental Comments at 36-37). NGA claims that the Legislature could not have intended the registration requirement apply to Contractors performing landscaping work or fence repair "because that would not serve the interest of enhancing pipeline safety and reducing risk, which are the clear purposes of the statute" (NGA Supplemental Comments at 38). NGA further states: "A reasonable construction of the statute, with due consideration of its purposes, is that the Legislature intended the Contractor registration requirement to apply only to contractors performing work on a pipeline that is used directly in the distribution of natural gas or piping at a Liquified Natural Gas ("LNG") facility" (NGA Supplemental Comments at 38). NGA cites to the

PHMSA regulations defining pipeline and piping (NGA Supplemental Comments at 38, n.8 and n. 9). NGA proposes the following amendment to the definition of Gas Work:

> Gas Work. Any activity performed on a pipeline or piping at a Liquefied Natural Gas (LNG) facility 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, 220 CMR 101.00 through 115.00, and all federal pipeline safety standards as set forth in 49 CFR Part 192; federal safety standards for liquefied natural gas (LNG) as set forth in 49 CFR Part 193.
>
> (NGA Supplemental Comments at 38).

The Department received additional comments expressing concerns regarding the applicability of Contractor registration requirements to certain categories of Contractors, such as those providing building maintenance, landscaping, and fencing (Unitil Comments at 6-7; NGA Initial Comments at 8). Operators also sought clarity on this issue at the technical session on March 23, 2023. NGA recommends limiting the applicability of the Contractor registration requirements to "specifically identify those contractors performing covered tasks on a pipeline facility" (NGA Initial Comments at 8). Similarly, Unitil claims that there is no gas system safety benefit in applying the regulation to Contractors performing work on facilities that are not used directly in the distribution of natural gas (Unitil Comments at 6-7). As such, Unitil proposes either amending the definition of "Gas Work," or alternatively, revising the language of 220 CMR 101.07 as follows:

> (1) Contractors who wish to be eligible to receive contracts with operators to perform gas work on facilities that are used directly in the distribution of natural gas shall be required to register annually with the Department.
> (2) Operators who utilize contractors to perform gas work on facilities that are used directly in the distribution of natural gas shall be required to:

> (3) Operators who utilize contractors to perform gas work on facilities that are used directly in the distribution of natural gas shall be required to evaluate contractor qualifications by…
>
> (Unitil Comments at 7 & n. 2).

NGA suggests that Contractors performing work on pipeline facilities already have a contractual obligation to provide operators with "documentation and assurance that they are fully trained and qualified to perform specified work including meeting applicable regulatory requirements of Subpart N, Subpart H, 49 CFR Parts 199 and 40" (NGA Initial Comments at 8). NGA additionally "understands the Department's desire to have additional knowledge of Contractors performing work on behalf of an [o]perator" (NGA Initial Comments at 8). NGA suggests general parameters for the Department to consider as to the process for registering and certifying Contractors (NGA Supplemental Comments at 39). Specifically, NGA proposes the Department's annual filing outline the following requirements:

> • Documentation for certification should be filed with the Department no later than the fourth quarter each year to cover the upcoming construction season.
> • The timeframe for approval of certification should be no later than 90 days from the submittal date.
> • Certification should be effective until the next annual review, which is consistent with the Climate Act's language that certification be on an "annual basis."
> • Contractors should remain in good standing if they are working through the enforcement process—only final determinations should impact standing.
>
> (NGA Supplemental Comments at 39).

The Attorney General supports 220 CMR 101.07 as it is consistent with the Climate Act (Attorney General Reply Comments at 2). Specifically, the Attorney General "recommends that the contractors' filings include documentation that the operators have

confirmed that contractors' filings comply with proposed 220 C.M.R. § 101.07; MFS Standards Subpart N- *Qualification of Pipeline Personnel*; 49 CFR Part 193 Subpart H-*Personnel Qualifications and Training (LNG)*; and 49 C.F.R Parts 199 and 40 *DOT Drug and Alcohol Testing Programs*" (Attorney General Reply Comments at 4). The Attorney General also emphasizes that operators have a duty to ensure that their Contractors and employees follow all federal and state pipeline safety laws and regulations, including PHMSA OQ regulations (Attorney General Reply Comments at 2-3; Attorney General Supplemental Reply Comments at 4). The Attorney General proposes the following modifications to 220 CMR 101.07(1)(a) and (b):

> (1) Contractors who wish to be eligible to receive contracts with operators to Perform gas work shall be required to register annually with the Department
> (a) That the contractor provide confirmation from its operator that it is in good standing with the Department, including, but not limited to being in compliance with:
> 1. all penalties; and
> 2. all consent order items.
> (b) That the contractor provide confirmation from its operator that it is in compliance with:
> 1. 49 CFR Part 192 subpart N;
> 2. 49 CFR Part 193 subpart H (if applicable); and
> 3. 49 CFR Parts 199 and 40.

(Attorney General Reply Comments at 2-3; Attorney General Supplemental Reply Comments at 4).

NEGWA supports the Department's proposed regulation and notes that the requirements are not onerous (NEGWA Initial Comments at 2; NEGWA Supplemental Comments at 2). NEGWA asserts that this regulation provides the Department a new tool to both ensure that Contractors comply with all of the Department's orders and to ensure that

Contractors meet the minimum legal threshold to safely perform Gas Work on the state's pipelines (NEGWA Initial Comments at 2; NEGWA Supplemental Comments at 2).

b. Analysis and Findings

The Department makes no substantive changes to the definition of "Contractor" or the definition of "Gas Work." Final Regulations, 220 CMR 101.02. The Department recognizes that not all Contractors are performing Gas Work, but disagrees that the language would lead to results that are unreasonable or of little practical value. The Department emphasizes that the focus of the regulation is on the activity and type of work being performed and not on the categorization of Contractors, consistent with the public safety and pipeline safety goals of the Climate Act. The Department declines to limit the applicability of this regulation solely to those activities performed on a pipeline or piping at an LNG facility. Similarly, the Department declines to limit the applicability of this regulation only to Gas Work on facilities that are used directly in the distribution of natural gas. The Department also notes that operators may apply for an exception to the provisions of 220 CMR 101.07 in accordance with 220 CMR 101.03.

The Department agrees with the Attorney General and finds that requiring Contractors to provide confirmation from each operator that the Contractor is in compliance with 49 C.F.R. Part 192 subpart N; 49 C.F.R. Part 193 subpart H, and 49 C.F.R. Parts 199 and 40 is reasonable, not overly burdensome to operators, and promotes pipeline safety. Final Regulations, 220 CMR 101.07(1)(b). The Department declines to adopt the Attorney General's recommendation requiring Contractors to provide confirmation from each operator

that the Contractor is in good standing with the Department. The Department finds that the Contractor is in the best position to certify that it is in good standing with the Department (i.e., to ensure that all civil penalties have been paid and to ensure that it is in compliance with all consent order items). Final Regulations, 220 CMR 101.07(1)(a).

The Department amends 220 CMR 101.07(1)(a)(1) to now read "the payment of all civil penalties." The Department also removes the language initially proposed in 220 CMR 101.07(1) stating that Contractors must provide documentation because such language is superfluous to the language "[i]n a manner specified by the Department." Finally, the Department makes additional changes for clarity. Final Regulations, 220 CMR 101.07(1).

2. 220 CMR 101.07(2)

a. Comments

Several commenters raise concerns regarding the proposed requirement of 220 CMR 101.07(2)(b) to maintain a ratio of no greater than two "contractor crews" to every one qualified inspector within its service territory (LDCs Initial Comments at 2-3; NGA Supplemental Comments at 40). NGA recognizes that "the Dynamic Risk Report states that operators should "[c]onsider using inspectors on a 1:1 or 1:2 ratio on job sites to provide the level of interaction between crew and inspector at a work site that adds value and enhances safe execution of the work" (Dynamic Risk Report, Phase II at 84; NGA Supplemental Comments at 40). Further, NGA acknowledges the Dynamic Risk Report recommendations addressing the need to increase the use of independent, engaged inspectors with the goal of

achieving a ratio closer to 1:1 or 1:2 inspectors per work site (NGA Supplemental Comments at 40 n. 10).

NGA asserts that a ratio of no greater than two contractor crews to every one inspector is reasonable in certain instances (NGA Supplemental Comments at 40). NGA cautions that a 2:1 ratio for some activities, such as cathodic protection readings, would increase customer costs with no correlating safety benefit (NGA Supplemental Comments at 40). Similarly, the LDCs request clarification on the intent of this provision and whether it applies broadly or only to specific work, including installation work, cathodic protection, or leak surveys (LDCs Initial Comments at 2). NGA asserts that "[m]ost [o]perators confirm Quality Assurance on these types of tasks through their Quality Control and Quality Assurance programs" (NGA Supplemental Comments at 40). NGA explains "that the span-of-control crew/inspector ratio be reconsidered and provide additional clarity for the type of work being performed, similar to the risk-based approach to span-of-control advocated in ASME B31Q for tasks performed under direct observation" (NGA Initial Comments at 9). Eversource, which has a Quality Control and Quality Assurance ("QAQC") program, recommends that the regulation be amended to require operators to maintain a ratio of three contractor crews to every one qualified inspector within its service territory (Eversource Comments at 9). Eversource seeks to add a provision allowing for the ratio to be increased to four contractor crews to every one qualified inspector with prior notification to the Department when unplanned absences occur (Eversource Comments at 9).

NGA emphasizes that the 2:1 ratio should apply only to activities that represent a higher safety risk (NGA Supplemental Comments at 40-41). NGA suggests defining "contractor crews" as consisting of "two or more individuals engaged in the installation of gas mains, gas services, or piping at an LNG or LPG plant, or regulator station" to make sure that the 2:1 ratio applies to those activities that represent a higher safety risk (NGA Supplemental Comments at 41). The LDCs request clarity on the definition of "inspector" in the proposed regulation (LDCs Initial Comments at 2). NGA recommends the term "inspector" as opposed to "qualified inspector" in 220 CMR 101.07(2)(b) (NGA Supplemental Comments at 41). NGA contends that an inspector need not be formally operator-qualified on a task (NGA Supplemental Comments at 40-41). Some operators expressed similar concerns on the meaning of "qualified inspector" at the technical session on March 23, 2023.

NEGWA supports the 2:1 ratio for contractor crews to an LDC inspector (NEGWA Initial Comments at 3; NEGWA Supplemental Comments at 3). NEGWA states this is a longstanding best practice in the industry (NEGWA Initial Comments at 3; NEGWA Supplemental Comments at 3).

b. Analysis and Findings

The Department adopts several changes to 220 CMR 101.07(2) in considering stakeholder input. The changes reflect that operators who utilize a Contractor to perform Gas Work must "[m]aintain a ratio of not fewer than one qualified operator inspector to every two Contractor crews within its service territory." Final Regulations, 220 CMR

101.07(2). The Department adds the term "operator" to clarify that the inspector must be qualified and an inspector who is an employee of the operator. Final Regulations, 220 CMR 101.07(2)(b). The Department declines to remove the requirement that an inspector be qualified as we find that such a change would have a negative effect on public safety.

The Department acknowledges concerns raised by NGA and other commenters regarding the applicability of the ratio requirement in all instances. The Department recognizes the costs of implementation and the impact the ratio requirement will have on operators. Nonetheless, the Department finds that the ratio requirement is consistent with the overall recommendations of the Dynamic Risk Report. This added oversight increases interactions at a work site which contributes to the safer execution of work performance. The Department adds language to clarify that the ratio requirement shall apply only to Contractor crews of two or more individuals. Final Regulations, 220 CMR 101.07(2)(b). The Department makes this change so that the ratio requirement will not apply to activities that may only utilize one individual, e.g., leak surveys.

3. 220 CMR 101.07(3)(b)

a. Comments

NGA contends that this regulation will have the unintended consequence of eliminating the "span-of-control" training approach, ultimately inhibiting the development of a skilled workforce that can perform tasks effectively with little safety enhancement (NGA Supplemental Comments at 42; NGA Initial Comments at 10). NGA maintains that "span-of-control" training in addition to classroom training is how most [o]perators demonstrate

appropriate training consistent with 49 CFR 192.805(h)" (NGA Supplemental Comments at 42). NGA alleges there is a need to preserve the "span-of-control" training approach and proposes new language to 220 CMR 101.07(3)(b) that limits "span-of-control" training to a "span-of-control" ratio of no more than one qualified individual to one non-qualified individual (NGA Supplemental Comments at 42).

Operators explain that the regulation should be revised to make it consistent with 49 C.F.R. § 192.805(c), which allows individuals who are not qualified to perform a covered task if directed and observed by an individual who is qualified (NGA Supplemental Comments at 42-43; Unitil Comments at 7-8; NGA Initial Comments at 8). At the March 23, 2023 technical session, operators raised similar concerns to those articulated in the written comments on this point.

The Attorney General supports requiring that only qualified individuals perform covered tasks and notes that the proposed regulatory language of NGA makes no mention of training or "span-of-control" training (Attorney General Supplemental Reply Comments at 5-6). NEGWA states similarly it is a significant improvement in ensuring LDC accountability for Contractors (NEGWA Supplemental Comments at 2). The Attorney General highlights that operators suggest essentially the same language as 49 C.F.R. § 192.805(c) (Attorney General Supplemental Reply Comments at 5-6).

The Attorney General expresses that additional language is needed to align the proposed regulation with the federal regulations, PHMSA standards, and Department precedent (Attorney General Reply Comments at 6; Attorney General Supplemental Reply

Comments at 5-7). Specifically, the Attorney General suggests adding the following language to 220 CMR 101.07(3)(b):

> Ensuring that all personnel performing covered tasks are qualified and have the necessary knowledge and skill to ensure the safe operation of pipeline facilities.
>
> (Attorney General Supplemental Reply Comments at 7).

b. Analysis and Findings

While the Department acknowledges the impact this may have on operators and Contractors, the Department declines to make any changes to the regulation and adopts its own language. Final Regulations, 220 CMR 101.07(3)(b). We find that this regulation will have a significant impact on public safety. We disagree with the argument put forth by the LDCs and NGA that this regulation will inhibit on the ground or on-the-job training. These changes will ensure that all personnel, including Contractors, have the requisite training, skills, and knowledge to perform tasks and ensure safer operation across all OQ covered tasks. The Dynamic Risk Report specifically recommended enhancement of the OQ program in the Commonwealth (Dynamic Risk Report, Phase II at 62, 86). The Department declines to adopt the language proposed by the Attorney General as 49 C.F.R. § 192.805(b) and 49 C.F.R. § 192.805(h) already require that operators ensure that all Contractors have the requisite knowledge and skills to perform covered tasks in a manner that ensures the safe operation of pipeline facilities.

4. 220 CMR 101.07(3)(c)

a. Comments

The LDCs express numerous concerns with the requirement that operators maintain complete and accurate OQ training and certification records (LDCs Initial Comments at 3). Commenters assert that since Contractors are typically responsible for maintaining these records, the proposed regulation is duplicative, inefficient, and adds little safety value (NGA Initial Comments at 8; NGA Supplemental Comments at 43). Unitil recommends that the Department clarify that the regulatory requirement is restricted to records that the operator administers and does not extend to all contractor training records (Unitil Comments at 7-8).

The LDCs assert that it would be administratively burdensome for operators to comply with the proposed regulation as written, arguing that these responsibilities are ultimately outside of the control of the operators (LDCs Initial Comments at 3). In addition, the LDCs state that because Contractors work for multiple LDCs, it is most efficient to maintain these records at a central source like NGA (LDCs Initial Comments at 3). Similar concerns on this issue were raised by a few operators at the technical session on March 23, 2023.

The LDCs and NGA propose, as an alternative to maintaining records, that operators perform audits or inspection processes of contractor records (LDCs Initial Comments at 3-4; NGA Initial Comments at 8). NGA recommends a mandate that operators implement processes and protocols to make sure that Contractors are maintaining complete and accurate

OQ training and certification records (NGA Supplemental Comments at 43). Specifically, NGA proposes the following revisions:

> (3) Operators who utilize contractors to perform gas work shall be required to evaluate contractor qualifications by:
>
> (a) Ensuring that all contractors follow the operator's written qualification program;
>
> (b) Ensuring that all personnel performing covered tasks are qualified or, if they are not qualified, ensuring that they shall perform such tasks under the direction and observation of an individual who is qualified with a span-of-control ratio of no more than one qualified individual to one non-qualified individual (1:1 ratio);
>
> (c) Implementing processes and protocols to ensure all Contractors utilized by the Operator are maintaining complete and accurate OQ training and certification records. ~~Maintaining complete and accurate OQ training and certification records for all contractors.~~
>
> (NGA Supplemental Comments at 43).

The Attorney General opposes the new language proposed by operators requiring Contractors alone to maintain such records. The Attorney General emphasizes that it is important to require operators to confirm Contractors are maintaining OQ records (Attorney General Supplemental Reply Comments at 3). The Attorney General argues that the language operators recommend is clearly inconsistent with 49 C.F.R. § 192.807 (Attorney General Supplemental Reply Comments at 3).

b. Analysis and Findings

The Department agrees with the Attorney General that it is essential that operators maintain complete and accurate OQ training and certification records for each Contractor, consistent with 49 C.F.R. § 192.807. Thus, the Department rejects NGA's recommendation

regarding this requirement. Final Regulations, 220 CMR 101.07(3)(c). The Department clarifies that the scope of responsibility on the operator is not limited to those OQ training and certification records the operator administers for each Contractor. The requirement extends to OQ training and certification records of a Contractor that an operator utilizes to perform Gas Work.

5. 220 CMR 101.07(3)(d)

a. Comments

The Attorney General proposes that the Department utilize the word "ensuring" in place of "monitoring" in this regulation (Attorney General Supplemental Reply Comments at 8; Attorney General Reply Comments at 7). The Attorney General explains that "ensuring" is consistent with the language of 220 CMR 101.07(3)(a) and (b) as well as the federal drug and alcohol testing requirements imposed upon operators and Contractors (Attorney General Reply Comments Page 7).

b. Analysis and Findings

The Department agrees with the Attorney General and replaces "monitoring" with "ensuring." Final Regulations, 220 CMR 101.07(3)(d).

E. Distribution Maps & Records, 220 CMR 101.08

1. Timely Updates of Maps and Records, 220 CMR 101.08(1) and (2)

a. Comments

The Climate Act directs the Department to "establish requirements for the maintenance, timely updating, accuracy, and security of gas company maps and records." St. 2021, c. 8 § 86. NGA asserts that the term "timely" should be defined based on

practical considerations and in relation to the Climate Act's requirement that maps and records be annotated accurately and stored in a secure location (NGA Supplemental Comments at 45). NGA contends that a 30-day window is an insufficient period of time to relay the required information from field personnel, to perform the review and validation necessary to ensure the updates are accurate, and to save them in a secure location, which may include one or more electronic repositories (i.e., GIS System, cloud-based systems) (NGA Supplemental Comments at 45).

In its initial comments, NGA seeks clarity on the definition of "completion of construction" and consideration for extending the update timeframe from 30 to 120 days (NGA Initial Comments at 9). NGA recommends a 60 business day window to update maps and records based on the operating experience of its members (NGA Supplemental Comments at 45). NGA explains that the 60 business day window gives sufficient time for the review and validation cycle and would not exceed federal reporting timeframes on asset documentation from the prior calendar year (NGA Supplemental Comments at 45). Additionally, NGA states that during construction season the workload to update maps and records is higher, resulting in "practical workforce challenges" during this time (NGA Supplemental Comments at 45).

NGA argues that the mandates of 220 CMR 101.08(1) and 220 CMR 101.08(2) "be required of either maps *or* records, in a manner determined by the operator based on the type of activity and the associated system of record" (NGA Supplemental Comments at 45). In support of this recommendation, NGA claims that there are short term activities that need not

be included on maps because updates to records will provide the necessary information to personnel (NGA Supplemental Comments at 45).

NGA suggests revisions to clarify the intent of the terms *completion of construction* and *maintenance* in 220 CMR 101.08(1)(b) and 220 CMR 101.08(2), respectively (NGA Supplemental Comments at 45). NGA proposes the following language for 220 CMR 101.08(1) and 220 CMR 101.08(2):

> (1) Operators 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~~ or records are:
> (a) Accurate, complete, and shall contain the location of all active pipes, including but not limited to mains, services, and service stubs;
> (b) Updated within 60 business ~~30~~ days of the completion of construction~~,~~ or maintenance (defined as purging into or out of service), 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, which alters the facility's location or size, must be identified in the Operator's maps or ~~and~~ records and be available to operating personnel.
>
> (NGA Supplemental Comments at 46-47).

Eversource acknowledges the safety enhancements that come with improved records and the positive impact of mapping updates on gas distribution system safety and reliability (Eversource Comments at 9). While Eversource notes that it already has mapping systems and procedures in place that conform to a number of items in the proposed regulations, it asserts that there are practical limitations that should be considered (Eversource Comments at 9-10). Eversource suggests revisions to 220 CMR 101.08(1)(b) to allow more time for updating maps and records, particularly during the busy parts of the construction season, and

to clarify the definition of "completion" of construction (Eversource Comments at 10). In addition, Eversource recommends either specifying which maintenance activities are subject to the regulations or excluding maintenance activities entirely (Eversource Comments at 10). Eversource contends that there is a risk of increased confusion or misunderstanding of the information in the GIS system if it is required to update the locations of maintenance activities in its mapping system given the large amount of information that will be added daily (Eversource Comments at 10). Eversource proposes the language below:

> 101.08(1)(b) Updated within ~~30~~ 120 days of the completion of construction projects (which includes the final tie-in and abandonment of facilities, where applicable), ~~maintenance~~, or discovery of a main or service;
> 101.08(2) ~~Facilities~~ Planned capital projects that are under active construction ~~or maintenance~~ must be identified in the Operator's maps and records and be available to operating personnel.
>
> (Eversource Comments at 10).

Unitil requests an extension of the timeframe to update maps and records to 120 days. It notes that the proposed 30-day timeframe is not sufficient where this information is gathered from field employees which then needs thorough review and verification before being appropriately entered into its record-keeping system (Unitil Comments at 8). Unitil also suggests clarifying the definition of "completion" of construction (Unitil Comments at 8). Unitil proposes the following language:

> 101.08(1)(b) Updated within ~~30~~ 120 days of the completion of construction (which includes the final tie-in and de-energization of facilities, where applicable), maintenance, or discovery of a main or service.
>
> (Unitil Comments at 8).

The LDCs state that they have mapping systems, procedures, and processes in place that align with many aspects of the proposed regulation (LDCs Initial Comments at 4). Further, many of the items required in the proposed regulation are included in the LDCs' agreements with Contractors (LDCs Initial Comments at 4). The LDCs request clarification of the term "completion" and propose that "in service" for new mains work, or "abandonment" in the event of work associated with existing mains, be the requisite metric, where the completion of construction or maintenance is defined as purging into or out of service, or discovery of a main or service (LDCs Initial Comments at 4). The LDCs recommend a minimum of 120 days to update maps and records to allow for verification of information returning from the field and appropriately input into each LDC's record keeping system (LDCs Initial Comments at 4).

The Attorney General supports the 30-day rule and opposes any extension of this timeframe (Attorney General Supplemental Reply Comments at 2, 10-11). The Attorney General reasons that "[a]ccurate maps and records have long been necessary elements for a safer operating system" (Attorney General Supplemental Reply Comments at 11-12). The Attorney General cites several instances where PHMSA, the American Petroleum Institute, NTSB, the American Gas Association, and the Dynamic Risk Report emphasize the need for operators to maintain timely and accurate and maps and related recordkeeping (Attorney General Supplemental Reply Comments at 11-12).

At the March 23, 2023 technical session, several operators raised a concern regarding maps and records being available to all personnel. Operators also raised concerns about the

30-day timeline as well as the applicability of the regulation to short-term and long-term work. Operators also asked about the applicability of the regulation to all of an operator's facilities.

NEGWA supports the proposed regulations that will ensure that records containing information regarding active worksites and hazards are readily accessible to the LDCs' workforces and their contractors' workforces (NEGWA Initial Comments at 4; NEGWA Supplemental Comments at 4).

b. Analysis and Findings

The Department rejects the argument that the requirements of 220 CMR 101.08(1) and 220 CMR 101.08(2) apply to either maps *or* records, in a manner determined by the operator based on the type of activity and the associated system of record. As NGA correctly notes, the Climate Act directs the Department to establish requirements for the maintenance, timely updating, accuracy, and security of both gas company maps *and* records. The Department amends for clarity the language of 220 CMR 101.08(1)(a) from "shall contain" to "identify." Final Regulations, 220 CMR 101.08(1)(a).

The Department extends the timeframe to update maps and records from 30 days to 60 days. Final Regulations, 220 CMR 101.08(1)(b). The Department does not agree that the 120-day period proposed by commenters constitutes "timely" updating as required by the Climate Act. The Department acknowledges the practical considerations a 30-day limit would impose on operators who not only must review data received from the field, but also must properly verify data to ensure that the maps and records are accurate and secured. In

extending this time period, the Department acknowledges the logistical concerns raised by the operators given the review and verification procedures utilized. The Department makes an amendment to clarify that each operator shall establish and follow procedures to ensure that maps and records are updated within 60 days of the "completion of maintenance" activities. Final Regulations, 220 CMR 101.08(1)(b).

The Department finds that 220 CMR 101.08(2) is necessary to conduct safe operations and is consistent with the federal requirement that operators prepare and follow a written procedure ensuring construction records, maps and operating history are available to appropriate operating personnel during maintenance or operations. 49 C.F.R. § 192.605(b)(3). The Department rejects language limiting this to planned capital projects that are under active construction or to those that alter the facility's location or size. The Department adopts the recommendation requiring each operator to establish and follow procedures to ensure that maps and records are available to all "applicable" operating personnel. Final Regulations, 220 CMR 101.08(1)(d).

2. Training on Maps and Records Procedures, 220 CMR 101.08(3)

a. Comments

NGA seeks clarity on the scope of training required on maps and records procedures (NGA Initial Comments at 9). NGA recommends the following language for 220 CMR 101.08(3):

> (3) Operators shall establish ~~a~~ training for all construction and maintenance staff, including contractors, on its maps and records procedures.

(NGA Supplemental Comments at 7).

NEGWA supports the requirement that workers performing Gas Work will be trained on maps and records procedures (NEGWA Initial Comments at 4; NEGWA Supplemental Comments at 4).

b. Analysis and Findings

The Department adopts the language proposed by NGA removing the article "a" as the Department seeks to ensure ongoing training occurs. Final Regulations, 220 CMR 101.08(3).

3. Annual Inspection of Maps and Records, 220 CMR 101.08(4)

a. Comments

Operators in written comments and at the March 23, 2023 technical session sought clarity on the scope of annual inspections (NGA Initial Comments at 9). NEGWA notes that routine, annual inspections establish a failsafe to ensure that LDC maps and records are maintained over time (NEGWA Initial Comments at 4; NEGWA Supplemental Comments at 4).

Both the LDCs and NGA contend that requiring an annual review of maps and records provides no incremental pipeline safety value and may threaten the current, and arguably more efficient, method of inspecting maps and records (NGA Supplemental Comments at 46; LDCs Initial Comments at 4-5). The current method consists of an ongoing process requiring continuous review and verification (NGA Supplemental Comments at 46; LDCs Initial Comments at 4-5). The LDCs maintain that an "annual" inspection requirement is contrary to the daily oversight and review of the LDCs' mapping systems

(LDC Initial Comments at 4-5). The LDCs note that "[t]hese records are not static, lending themselves to a single, annual review for inconsistencies" (LDCs Initial Comments at 5). The LDCs state that they identify and address errors through ongoing field inspections (LDCs Initial Comments at 5). NGA asserts that maps and records are subject to review and verification in real time as information is transmitted back and forth from supervisors to resources in the field in the ordinary course of business (NGA Supplemental Comments at 46). Further, the LDCs explain corrections to inaccuracies cannot be identified until a physical location is visually inspected and compared to the map or record (LDCs Initial Comments at 5). NGA suggests the following language:

> (4) Operators shall implement a Quality Assurance and Quality Control program to identify and correct inaccuracies of its maps and records ~~conduct annual inspections of its maps and records to identify inaccuracies~~.
>
> (NGA Supplemental Comments at 46-47).

b. Analysis and Findings

The Department agrees with NGA that a QAQC program to identify and correct inaccuracies with an operator's maps and records on a rolling basis is more effective to achieve the Department's public safety goal. Thus, the Department adopts the language proposed by NGA. Final Regulations, 220 CMR 101.08(4). To ensure that an operator is adequately identifying and correcting inaccuracies with its maps and records, the Department directs operators to report the results to the Department annually in a format to be determined by the Department. Final Regulations, 220 CMR 101.08(4).

F. Single-Feed Systems, 220 CMR 101.09(1)

1. Comments

National Grid and NGA suggest eliminating the requirement of 220 CMR 101.09(1)(c) to report abnormal pressure variations on single-feed systems to the Department where such notifications are covered already by the Telephonic Incident Reporting requirements of 220 CMR 101.09(6) (NGA Supplemental Comments at 47-48, National Grid Comments at 5). Unitil states that "it would be constructive to facilitate a broad stakeholder discussion about the safety and policy benefits that telemetering or recording pressure gauges would deliver, the scope of deployment contemplated by the Department, the benefits relative to the costs, and any unintended consequences that might arise from this approach" with respect to 220 CMR 101.09(1)(a) (Unitil Comments at 10). Unitil also seeks clarity on the meaning of "abnormal pressure variations" within 220 CMR 101.09(1)(c) (Unitil Comments at 10).

2. Analysis and Findings

The Department agrees the criteria specified in the Telephonic Incident Notification Procedures requires operators to report any abnormal pressure variations resulting in overpressurization or underpressurization promptly but no more than two hours following discovery. Therefore, the Department removes this requirement. Final Regulations, 220 CMR 101.09(1).

G. Mechanical Fittings Failures, 220 CMR 101.09(5)

1. Comments

Liberty proposes modifying 220 CMR 101.09(5) to specify only failures resulting in a hazardous gas release need to be reported. Liberty suggests inserting the phrase "that results in a hazardous release of gas" into the regulation, requiring operators to report such failures within 15 days (Liberty Comments at 4). Liberty argues that without this change, the regulation might be overly broad and recommends the following language:

> All operators must 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.

(Liberty Comments at 4).

2. Analysis and Findings

The Department adopts Liberty's proposal. Final Regulations, 220 CMR 101.09(5).

H. Construction Quality Assurance Plans 220 CMR 101.13

1. Comments

NEGWA supports these requirements for oversight of new construction by Contractors (NEGWA Initial Comments at 3). National Grid requests clarification on whether any new construction means all work, or only growth-related work, such as main extensions and new services (National Grid Comments at 7). National Grid also requests clarification on the difference between an "inspection," a "field verification audit," and a "performance audit" (National Grid Comments at 7).

2. Analysis and Findings

The Department adopts its proposed language. Final Regulations, 220 CMR 101.13. The Department notes that "any new construction" of outside Contractors applies to all new construction projects and is not limited to growth-related work such as main extensions and new services.

III. ADOPTION OF THE FINAL REGULATIONS

For the reasons stated above, the Department, by this Order, adopts the attached Final Regulations 220 CMR 100.00: Massachusetts Code For Storage, Transportation, and Distribution of Gas and 220 CMR 101.00: Massachusetts Natural Gas Pipeline Safety Code. The Department will file standard Regulations Filing Forms and the Final Regulations, 220 CMR 100.00 and 220 CMR 101.00, with the Office of the Secretary of the Commonwealth, State Publications and Regulations Division. The Final Regulations are effective upon publication in the Massachusetts Register.

By Order of the Department,

James M. Van Nostrand, Chair

Cecile M. Fraser, Commissioner

Staci Rubin, Commissioner

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220 CMR 100.00: MASSACHUSETTS CODE FOR STORAGE, TRANSPORTATION, AND DISTRIBUTION OF GAS

SECTION

100.01: Purpose

~~The provisions of~~ 220 CMR 101.00 through 115.00 ~~are~~is designed to ensure safe operating practices for persons engaged in the storage, transportation, and distribution of gas.

100.02: Applicability

Notwithstanding any language to the contrary, the provisions of 220 CMR 101.00 through 115.00 shall apply to any persons engaged in the storage, transportation~~,~~ or distribution of gas and, unless the context so requires, shall not be limited to gas corporations, gas companies, or municipal gas departments. ~~Each such provision~~ 220 CMR 101.00 through 115.00 shall apply to all new construction and new installations made subsequent to ~~the effective date of said provision~~October 11 2024 and shall not apply retroactively to installations existing on ~~the effective date of the provision~~ October 11, 2024.

REGULATORY AUTHORITY

220 CMR 100.00: M.G.L. c. 164, §§ 66, 76, 76C and 105A.

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220 CMR 101.00: MASSACHUSETTS NATURAL GAS PIPELINE SAFETY CODE

Section

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.

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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 ~~contracted~~contractually engaged with an operator to provide labor, materials, or equipment for the performance of ~~gas work. This~~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, ~~and~~ 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.

~~Incident. An event as defined in 49 CFR 191.3. For the purposes of 49 CFR 191.3(1)(ii), the estimated property damage shall be $50,000 or more.~~

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.

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

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

101.03: Applications for Exceptions and Waivers ~~from Provisions of 220 CMR 101.00~~

(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~~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:

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(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 Uprating projects.

(2) If there are no construction projects in a calendar year ~~meet~~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 ~~less~~fewer than three projects ~~irrespective of length or MAOP shall be reported to the Department~~, 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) ~~Operators~~Each operator shall take steps to protect ~~their~~its distribution ~~systems~~system from overpressure events. In addition to complying with 49 CFR Part 192, ~~operators~~each operator shall implement the following additional requirements within ~~two~~three years of ~~the effective date of 220 CMR 101.00, operators shall:~~October 11, 2024:
1. Install one of the following:
a. a "slam shut" device in the ~~station~~Pressure Regulating Station including in applications where there is only worker-monitor pressure control~~, or~~;
b. a third regulator; or
c. a full-capacity relief valve immediately downstream of the station only where a "slam shut" or third~~-~~ regulator ~~are~~is not practicable.
2. Install and employ telemetered pressure recordings at each Pressure Limiting ~~and~~Station or Pressure Regulating ~~Stations in~~

~~order~~Station to signal failures immediately to operators at control centers. The telemetering pressure gauge shall be installed ~~at~~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 ~~control (i.e., sensing)~~ lines for each Pressure Regulating Station within the system~~. The control line~~ 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 ~~control~~sensing lines ~~not contained within the safety of~~which extend beyond three feet from a Pressure Regulating Station vault or pit are plated to protect from possible damage. The ~~location, depth~~type of additional protection and ~~size~~the location of the ~~plates~~additional protection shall be mapped and documented as specified in 220 CMR 101.06(2)(a~~)()~~3~~);~~.

5. Ensure that all aboveground ~~control~~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 ~~at MAOP;~~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 ~~Limiting and~~ Regulating ~~Station isolations~~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 ~~checking~~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 ~~section of the distribution system~~Pressure Limiting Station or Pressure Regulating Station is operating above 90% of its maximum capacity. ~~Operators~~Each operator shall contact the ~~Division~~Department if any ~~section~~Pressure Limiting Station or Pressure Regulating Station is found to exceed 90% of its maximum capacity~~; and~~.

13. Establish or update procedures to require that personnel immediately respond to the location of any overpressure protection ~~(OPP)~~ activation.

(b) All maintenance activities on Pressure Limiting Stations and Pressure Regulating Stations shall include the following:

1. Any underground ~~control~~sensing lines undergoing maintenance shall be relocated to the safety of a Pressure Regulating Station vault or pit. If the relocation of the ~~control~~sensing lines is not ~~possible~~practicable, the operator shall repair or replace the leaking segment of a ~~control~~sensing line and ensure that all ~~control~~sensing lines are ~~plated~~protected as specified by 220 CMR 101.06(2)(a~~)(~~)4~~)~~.

2. If any major maintenance (*i.e.*, ~~valve replacement~~station reconfiguration) is to take place, the Pressure Limiting Station or Pressure Regulating Station ~~is to~~shall be updated to comply with the requirements of 220 CMR 101.06(2)(a).

(c) All future construction activities for new Pressure ~~Limiting and~~ Regulating Stations shall comply with all existing guidelines and shall:

~~1. Be designed in a worker-monitor style;~~

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 ~~third~~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 ~~a redundant parallel regulator piping run~~adequate redundancy to protect against a single failure;

5. ~~Have all control~~Be designed in a manner that limits sensing lines ~~contained within the~~from extending beyond three feet from a Pressure ~~Limiting or~~ Regulating Station vault or pit;

~~6. Include a flooding indicator that alerts in the operator's control centers;~~

6. ~~Include~~Be designed to ensure all regulator atmospheric vent lines terminate aboveground and are rain and insect resistant;

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7. For aboveground Pressure Regulating Stations located inside of buildings, include a gas sensor that monitors for general leaks that alerts ~~in~~ the operator's control centers; and

8. Include a telemetering pressure gauge installed ~~at~~as close as practicable to the outlet of each ~~regulating station~~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 7~~-~~½ 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. ~~The~~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~~), above.~~).

(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 ~~less~~fewer than three installation projects are undertaken by any ~~company~~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 ~~operating company~~operator to subject the weld to a destructive test as outlined in MFS Standards, Appendix C, paragraph I or to a radiographic examination.

(5) Protection from Hazards. (MFS Standards § 192.317~~.~~)).

(a) The method of protecting all new pipeline on trestles and bridges (including culverts at least ~~10~~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:

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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 ~~will~~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 ~~will~~shall be forwarded to the Director of the Division).
2. The utility company ~~will~~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.

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3. No permit for the installation of gas facilities on bridges ~~will~~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;
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;

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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. ~~Operators shall~~An operator may not install or operate a service regulator located within ~~ten feet of a~~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 an~~; or five feet in any direction from any forced air intake ~~into a building. Utilities shall not install or operate a service regulator located within three feet from an opening into a building~~. Service regulators that utilize overpressure shutoff technology or ~~any electrical source not intrinsically safe~~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~~; and~~.

b. If the operator learns of a service regulator that fails to meet the ~~three- or ten-foot~~ minimum distance ~~requirement,~~requirements as set forth in 220 CMR 101.06(7)(b)1., it shall ~~resolve the problem by extending the regulator vent to meet the requirement~~take remedial action within ~~60~~90 days of discovery.

2. All service ~~gas~~ regulator records shall be kept for at least ten years.

3. Each operator shall develop and implement a ~~seven-year~~ service regulator maintenance and inspection program. All service regulators shall be inspected during any activation, reactivation, or statutory meter ~~changes every seven years, including~~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~~, and~~ is conducted, and

to ensure that the service regulator is maintained in accordance with ~~manufacturers'~~manufacturer's specifications.

~~4. Service regulators on service lines without an excess flow valve (EFV) shall be replaced with meter replacement not to exceed seven years from installation.~~

(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.

(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.

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(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 ~~reestablish~~either:

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

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 ~~establish~~:

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

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) ~~The~~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 ~~manufacturers'~~manufacturer's specifications and the records kept for the life of the pipeline segment that was tested.

(f) ~~Operators must~~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.

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(g) Except for tie-in sections, pipelines shall be tested after installation and prior to being ~~brought~~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 ~~pretest~~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 ~~of~~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.

(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).

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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~~pressure Distribution Systems. (MFS Standards § 192.623).

(a) Maximum ~~allowable operating pressure.~~Allowable Operating Pressure. The MAOP of low-pressure distribution systems shall ~~be~~not exceed 14 inches water column.

(b) Minimum ~~operating~~Operating Pressure. For low-pressure service, the delivery pressure~~. The pressure at the outlet of any customer's service meter~~ to the customer shall ~~not~~ normally not be less than ~~one-half of the normal pressure at~~ ½ of the ~~outlet as recorded during the course of the year~~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:

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1. The odorant ~~may~~must not be deleterious to persons, material, or pipe.

2. The products of combustion from the odorant ~~may~~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.

(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) ~~The~~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 ~~the effect of an escape of~~ 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 ~~but at least once each calendar year~~. 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:

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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 ~~leak~~leakage survey records instead of electrical surveys for monitoring corrosion protection, in accordance with 49 CFR 19~~3~~2.4~~65~~56(e), shall retain those ~~leak~~leakage survey records for the life of the pipeline.

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

(a) ~~The~~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 ~~(see~~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 ~~(in accordance with~~, 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 ~~effective date of 220 CMR 101.00,~~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) ~~Threat~~Risk of Overpressurization. ~~Operators~~Each operator shall consider the single points of failure that could lead to an ~~over-pressurization~~overpressurization of ~~a~~its distribution system as a threat ~~and to~~. Each operator shall review and ~~adjust their~~revise its Distribution Integrity Management Plan (DIMP) accordingly. If each of the ~~threat of over-pressurization~~single points of ~~distribution systems is not considered~~ failure that could lead to an ~~existing threat by an operator, justification for the elimination of this threat from consideration shall be documented in the operators DIMP.~~

~~(b) Threat of Reaching or Exceeding Maximum Capacity. Operators shall consider the vulnerability~~overpressurization of a distribution system ~~to reach or exceed maximum capacity as a whole or in part. The threat of reaching or exceeding maximum capacity shall be evaluated and added to the DIMP accordingly. If the threat of reaching or exceed maximum capacity of a distribution systems~~ is not considered an existing threat by an operator, justification for the elimination of this threat from consideration shall be documented in the ~~operators~~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 ~~(ERT)~~ 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 ~~at gate~~within Pressure Regulating Stations and ~~district regulator stations as well as~~ at service regulators.

(23) Abandonment of Valves. ~~Operators must~~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) ~~Contractors~~Each Contractor who ~~wish~~wishes to be eligible to receive contracts with ~~operators~~an operator to perform ~~gas work~~Gas Work shall be required to register annually with the Department. ~~Contractors must provide documentation, in~~In a manner specified by the Department, ~~and certify~~each Contractor shall:

(a) ~~That~~ Certify that the ~~contractor~~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.

(b) ~~That~~ Provide confirmation from each operator that the ~~contractor~~Contractor is in compliance with~~:~~ the following requirements (if applicable):

1. 49 CFR Part 192 subpart N;
2. 49 CFR Part 193 subpart H ~~(if applicable);~~; and
3. 49 CFR Parts 199 and 40.

(c) ~~The contractor shall comply~~Comply with any other requirements set forth by the Department.

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(2) ~~Operators~~Each operator who ~~utilize contractors~~utilizes a Contractor to perform ~~gas work~~Gas Work shall ~~be required to~~:

(a) Ensure that ~~the contractor~~each Contractor is registered with the Department; and

(b) Maintain a ratio of ~~no greater~~not fewer than ~~two contractor crews to every~~ 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) ~~Operators~~Each operator who ~~utilize contractors~~utilizes a Contractor to perform ~~gas work~~Gas Work shall ~~be required to~~ evaluate ~~contractor~~Contractor qualifications by:

(a) Ensuring that ~~all contractors follow~~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 ~~all contractors.~~each Contractor; and

(d) Reviewing and ~~monitoring~~ensuring compliance with ~~the contractor's~~each Contractor's Drug and Alcohol plan.

101.08: Distribution Maps and Records~~.~~

(1) ~~Operators~~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 ~~shall contain~~identify the location of all active pipes, including but not limited to mains, services, and service stubs;

(b) Updated within ~~30~~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~~operator's maps and records and be available to operating personnel.

(3) ~~Operators~~Each operator shall establish ~~a~~ training for all construction and maintenance staff, including ~~contractors~~Contractors, on its maps and records procedures.

~~(4) Operators shall conduct annual inspections of its maps and records to identify inaccuracies.~~

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(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) ~~Operators~~ Each operator shall comply with all guidelines set by the ~~Division~~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 suppling 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 ~~each~~the following year in a format to be determined by the Department, in accordance with the following:

(a) Prior to January 1, 2025, ~~operators~~an operator may use telemetering or recording pressure gauges as may be required.

(b) ~~As of~~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.

~~(c) In addition to the annual report, operators shall report to the Department any abnormal pressure variations within 72 hours of discovery.~~

(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 ~~Division~~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.

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(4) Gate Box Reports. (M.G.L. c. 164, § 116B). No later than March 31st of each year, ~~operators~~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. ~~All operators must~~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. ~~Operators are required to~~Each operator shall notify the Department by telephone of certain specific events, as specified by the Department, in a format approved by the Department. ~~Operators must~~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) ~~Operators~~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 ~~manufacturers'~~manufacturer's procedures and specifications.

(2) ~~Operators~~Each operator shall have the means to verify date of calibration and expiration date of all such equipment covered under ~~(a) above~~220 CMR 101.11(1) in the field upon the request of the ~~Division~~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.

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Within one year of ~~the effective date of 220 CMR 101.00, operators~~October 11, 2024, each operator shall ensure that ~~their~~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~~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~~Contractor.

101.14: Operator Procedures Manual~~.~~

Each ~~Operator~~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.

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220 CMR 100.00: MASSACHUSETTS CODE FOR STORAGE, TRANSPORTATION, AND DISTRIBUTION OF GAS

SECTION

100.01: Purpose

220 CMR 101.00 through 115.00 is designed to ensure safe operating practices for persons engaged in the storage, transportation, and distribution of gas.

100.02: Applicability

Notwithstanding any language to the contrary, the provisions of 220 CMR 101.00 through 115.00 shall apply to any persons engaged in the storage, transportation or distribution of gas and, unless the context so requires, shall not be limited to gas corporations, gas companies, or municipal gas departments. 220 CMR 101.00 through 115.00 shall apply to all new construction and new installations made subsequent to October 11, 2024 and shall not apply retroactively to installations existing on October 11, 2024.

REGULATORY AUTHORITY

220 CMR 100.00: M.G.L. c. 164, §§ 66, 76, 76C and 105A.

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220 CMR 101.00: MASSACHUSETTS NATURAL GAS PIPELINE SAFETY CODE

Section

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.

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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.

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.

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Uprating. 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 Uprating projects.

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(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.

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

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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.

(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;
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.

(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.

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(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.

(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.

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(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.

(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.

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(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).

(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.

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(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.

(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 suppling 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.

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(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.

(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.

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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

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(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.