

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC UTILITIES

RESPONSE OF COLUMBIA GAS OF MASSACHUSETTS TO THE
FIRST SET OF INFORMATION REQUESTS FROM THE D.P.U.
PIPELINE ENGINEERING AND SAFETY DIVISION

D.P.U. 19-PL-07 – Merrimack Valley Incident (9/13/18)

Date: September 10, 2019

Responsible: Lee Reynolds, Manager Gas Standards

IR-PL-1-12: Please provide the critical valve inspection procedures in place at the time of the incident.

Response: The critical valve inspection procedures are stated in GS 1760.010(MA) "Critical Valve Inspection and Maintenance." In addition, valve box maintenance procedures associated with critical valves are also stated in GS 1760.900(MA) "Gas Valve Box Maintenance."

Both standards are included as Attachment IR-PL-1-12.



Distribution Operations

Gas Standard

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Companies Affected:

<input type="checkbox"/> NIPSCO	<input type="checkbox"/> CGV	<input type="checkbox"/> CMD
	<input type="checkbox"/> CKY	<input type="checkbox"/> COH
	<input checked="" type="checkbox"/> CMA	<input type="checkbox"/> CPA

REFERENCE 49 CFR Part 192.709, 192.745, 192.747; M.G.L. Chapter 164, Section 144

1. GENERAL

Each operating area must maintain a complete, up-to-date set of maps detailing the distribution network. In addition, each operating area must maintain a list of critical valves (also known as emergency valves). A sketch, map, or other means identifying and describing the location of the critical valve and other pertinent information must also be maintained.

Critical valves in distribution systems are valves that are designated by the Company deemed necessary for the safe operation of the system. Each critical valve in a distribution system shall be checked and serviced at least once each calendar year, at intervals not to exceed 15 months.

Critical valves for transmission lines are valves that are designated by the Company that might be required during any emergency. Each critical valve in a transmission line shall be inspected and partially operated at least once each calendar year, at intervals not to exceed 15 months.

2. INSPECTION AND MAINTENANCE REQUIREMENTS

The following requirements shall be followed.

- a. Before beginning inspection or maintenance on any critical valve, verify the valve location measurements by reviewing the sketch, map, pertinent information or other means of identifying and describing the location of the critical valve. Inaccurate information should be turned in to the supervisor for maps and/or record corrections.
- b. For above ground critical valves, before and after the inspection and maintenance process, ensure that above ground critical valves are locked unless the valves are located within a chain link security fence or a locked building.
- c. For below ground critical valves located in unsecured regulator or valve vaults, before and after the inspection and maintenance process, ensure that such below ground critical valves are locked, where practical.
- d. For all below ground critical valves, locate the valve box and perform the following.

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1. Verify that the valve box lid is identified by the word “GAS.” Lids without the word “GAS” shall be replaced prior to the next annual inspection.
 2. Remove the lid and verify if critical valve is tagged with a number. Verify critical valve number associated on the work/job order or related documentation is the same as the critical valve number tagged in the field. If a discrepancy exists, notify supervisor/leader to have the discrepancy corrected. If the critical valve tag is missing, a tag shall be created and installed before the inspection or maintenance task is completed.
- e. Check the valve box with a combustible gas indicator. If leakage is indicated, and the valve is a Kerotest Model 1 gate valve, and one can verify that the body to bonnet bolts have been replaced according to the Company’s accepted body to bonnet bolt replacement procedures, then one may continue with the inspection. If leakage is indicated, and the valve is a Kerotest Model 1 gate valve, and one cannot verify that the body to bonnet bolts have been replaced according to the Company’s accepted body to bonnet bolt replacement procedures, do not operate the valve. Report the valve to Supervision for repair. If leakage is found, refer to GS 1714.010, GS 1714.010(KY), GS 1714.010(OH), or GS 1714.010(PA), “Leakage Classification and Response.”
 - f. If leakage is indicated and one can positively determine that it is not a Kerotest Model 1 gate valve, then continue with the inspection, including operation of the valve.
 - g. If necessary, the valve box or vault shall be cleared of any debris that would interfere with or delay the operation of the valve.
 - h. Verify the operating nut is accessible and that the valve key to be used matches the type of operating nut found. The valve location record may contain this information. Observe the valve position so as to leave valve in same position as found when done.
 - i. Check the valve operation. Valves shall be operated to the extent necessary to establish operability during an emergency. If a valve is to be partially operated, precautions should be taken to avoid a service outage or other abnormal operating conditions. Distribution system critical valves used to separate system pressures or for odorant injection are excluded from being operated.
 1. For normally open valves – partially operate towards the closed position but do not close the valve, and return it to its original position.
 2. For normally closed valves – partially operate towards the open position but do not open the valve, and return it to its original closed position.
 - j. For lubricating valves, lubricate a valve only when it is leaking or if it is difficult to turn. Follow manufacturer’s recommendations.
 - k. Align the valve box to permit the use of a key, wrench, handle or other operating device and adjust it to proper grade.



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- l. Recheck the valve box with a combustible gas indicator. If leakage is found, refer to GS 1714.010, GS 1714.010(KY),GS 1714.010(OH), or GS 1714.010(PA),“Leakage Classification and Response.”
- m. Paint the top of the valve box cover yellow, if needed.
- n. Complete the inspection record (e.g., work order, job order).

3. ADDITIONAL VALVE INSPECTION AND MAINTENANCE REQUIREMENTS

After receiving a written notification from a municipality or the state regarding a significant project on a public way containing Company pipeline facilities, the Company shall ensure that any critical valve within the significant project area has a gate box installed upon it or a reasonable alternative that would otherwise ensure continued public safety prior to the start of the municipal or state project. Refer to GS 1760.900(MA) “Gas Valve Box Maintenance” for additional guidance.

In addition, any critical valve within the significant project area that has not been inspected (in accordance with Section 2 above) within the 12 months preceding the proposed start date of the municipal or state project shall be verified to be operational and accessible. If a critical valve is found to be inoperable, the repair or the designation of an alternate valve(s) shall be completed prior to the start of the municipal or state project.

For the purpose of this gas standard, “public way” means a street, roadway or sidewalk within the control of a Governmental Agency. "Governmental Agency" means any agency or department of the commonwealth (i.e., State of Massachusetts) or any political subdivision thereof, including a Municipality.

4. REQUIRED REMEDIATION OF INOPERABLE CRITICAL VALVES

If a valve fails to operate satisfactorily, the Company shall take prompt remedial action, for example, repair or replacement, unless the Company designates an alternative valve. Inoperable critical valves must be reported to the supervisor/leader for prompt remedial action. The inoperable condition (including the inability to locate the critical valve) shall be corrected within 15 months of the previous year’s inspection or the end of the current calendar year, or prior to the start of the municipal or state project, whichever occurs first, with the following exceptions.

If the inoperable condition cannot be corrected within this time period, Field Operations or Engineering shall have an alternate valve(s) designated to replace its function. A brief “written plan of operation” shall be attached to the inoperable critical valve and the alternative valve records. The alternative valve selected can be another critical valve or an existing non-critical valve.

NOTE: If the alternative valve selected is a non-critical valve, this valve shall meet the requirements of GS 2400.010, GS 2400.010(KY), GS 2400.010(MA), or



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GS 2400.010(PA), "Critical Valve Design Guidelines" and the requirements of this standard prior to the "written plan of operation" becoming effective. If the valve meets the requirements of this standard then it shall be designated as critical.

Upon correction of the inoperable condition, the "written plan of operation" shall be removed.

If an appropriate alternative valve cannot be designated, the actions taken and the expected timeframe to correct the inoperable condition shall be documented by local leadership and approved by the Operations Center Manager.

5. RECORDS

Complete the Company's critical valve inspection and maintenance record. Inspection and maintenance records must be kept in the Company's work management system or on file for at least five years plus the current year.



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REFERENCE Massachusetts General Law Chapter 164 Section 116B, Massachusetts DPU 06-48A; M.G.L. Chapter 164, Section 144

1. GENERAL

Whenever the Commonwealth or a city or town undertakes the repair of streets, roads or sidewalks, the Company shall provide for the maintenance and improvements of its gas valve boxes located in the streets, roads or sidewalks to be repaired, so that the gas valve boxes are more easily and immediately accessible.

After receiving a written notification from a municipality or the Commonwealth (i.e., State of Massachusetts) regarding a significant project on a public way containing Company pipeline facilities, the Company shall ensure that any shut off valve (i.e., critical valve, non-critical valve, curb valve) within the significant project area has a gate box installed upon it or a reasonable alternative that would otherwise ensure continued public safety prior to the start of the municipal or state project. A reasonable alternative that would otherwise ensure continued public safety includes identifying a critical valve(s) outside of the project area that would shut off gas flow to the project area and ensuring this critical valve(s) is accessible and operable prior to the start of the municipal or state project.

2. SCOPE AND APPLICABILITY

This gas standard applies only to gas company valve boxes located in the streets, roads and sidewalks in Massachusetts at locations where the Commonwealth, city or town has undertaken repairs since April 1, 2003.

3. DEFINITIONS

“Commonwealth” means the Commonwealth of Massachusetts.

“Confirmed Project” refers to a project that will be undertaken by a Governmental Agency on a Public Way and that is definitive in terms of (a) the specific location to be repaired; and (b) the time frame of the repair, as evidenced by either (i) a specific date reference if the project is to be completed by employees of the Governmental Agency, or (ii) the execution of a contract with an independent paving contractor if the project is to be completed by an outside contractor.

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"Valve Box" refers to a structure that (a) allows access to any valve on a Company's distribution pipeline system; and (b) would be affected by a Confirmed Project on a Public Way that is undertaken by a Governmental Agency.

"Governmental Agency" means any agency or department of the Commonwealth or any political subdivision thereof, including a Municipality.

"Municipality" means a city or town of the Commonwealth.

"Preliminary Project List" refers to a listing of Public Ways provided by the Governmental Agency to the Company, which provides information as to potential or tentative plans for future projects.

"Public Way" means a street, roadway or sidewalk within the control of a Governmental Agency.

4. EVALUATION AND INSPECTION REQUIREMENTS

4.1 Evaluation

For gas valve boxes located in streets, roads and sidewalks repaired between April 1, 2003 and October 14, 2008 the Company must review, and revise if necessary, its system maps and records to ensure that comprehensive and current system maps, and associated records, accurately identify the location of all valves boxes in all Commonwealth, city or town "streets, roads or sidewalks" that have been repaired since April 1, 2003.

4.2 Inspection

The Company must identify visually, or through accurate records, the location of any gas valve box in all Commonwealth or city or town streets, roads or sidewalks repaired in its service territory since April 1, 2003.

The Company must conduct an inspection program to confirm the location and maintain the accessibility of each valve box.

5. MAINTENANCE REQUIREMENTS

5.1 Pavement Repairs Between April 1, 2003 and October 14, 2008

For those valve boxes that may have been paved over between April 1, 2003 and October 14, 2008, the Company must either raise those valve boxes, or provide a reasonable alternative to raising boxes that would otherwise ensure public safety, before October 14, 2013. However, for those paved-over valve boxes that the Company may not be able to raise, and may not have a reasonable alternative that would otherwise ensure continued public safety, the Company must provide its employees accurate records, or maps, indicating the location of those valve boxes.

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The program to raise valve boxes identified in this section of this gas standard, or to provide a reasonable alternative that would otherwise ensure public safety, should be phased in over a reasonable period of time, implemented with attention to safety and cost effectiveness, and be consistent with street restoration standards found in GS 3000.930 "Massachusetts Street Restoration Standards."

5.2 Streets, Roads and Sidewalks Paved After October 14, 2008

5.2.1 Prior to Paving

Upon adequate notification by a Governmental Agency of a Confirmed Project involving the repair and/or paving of a Public Way, the Company shall arrange for appropriate personnel to maintain and raise any valve box that is located in the Public Way and affected by the Confirmed Project, so that the valve box is easily and immediately accessible. Such notification shall be deemed adequate based on the consideration of relevant factors including without limitation, the size and scope of the Confirmed Project, its location and the time of year construction is planned.

5.2.2 After Paving

For valve boxes that are paved over after October 14, 2008, barring any other requirements (e.g., street opening moratoriums for newly paved streets), the Company shall either raise those valve boxes, or provide a reasonable alternative that would otherwise ensure continued public safety, not later than nine (9) months after discovery. However, for those paved-over valve boxes that the Company may not be able to raise, and may not have a reasonable alternative that would otherwise ensure continued public safety, the Company must provide its employees accurate records, or maps, indicating the location of those valve boxes.

If and when an instance of inadequate notification or subsequent damage to a valve box (es) comes to the attention of the Company, the instance shall be documented by the Company, and at the appropriate interval, brought to the attention of the responsible Government Agency. Records of such occurrences shall be maintained by the Company and submitted to the Massachusetts Department of Public Utilities in accordance with Section 8 of this gas standard.

6. COMMUNICATION PROTOCOL WITH GOVERNMENT AGENCIES

6.1 Government Agency Contact

The Company shall maintain a current list of Government Agency contacts in the Company's service territory that are responsible for the maintenance of Public Ways. Prior to the commencement of the construction season each year, the Company shall formally request in writing a Preliminary Project List for Public Way

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reconstruction and/or resurfacing for each Governmental Agency in the service Territory. The annual request from the Company shall be mailed via certified mail or delivered to the appropriate Government Agency representative. The Company shall compile responses to the annual requests for the purposes of facilitating follow-up communication by the Company, if necessary.

The Company shall establish and maintain a liaison with the appropriate Government Agency representative in order to facilitate communications between the Company and the Government Agency.

6.2 Preconstruction Meetings

The Company must make every reasonable effort to attend preconstruction meetings scheduled by Government Agencies of which the Company is notified, or otherwise maintain ongoing contact with the Governmental Agencies in the Company's service territory that are responsible for the maintenance of Public Ways.

If and when an instance of inadequate notification of a paving project comes to the attention of the Company, the instance shall be documented by the Company, and at the appropriate interval, brought to the attention of the responsible Governmental Agency. Records of such occurrences shall be maintained by the Company and submitted to the Massachusetts Department of Public Utilities in accordance with Section 8 of this gas standard.

7. DOCUMENTATION

The Company shall document the number and locations of valve boxes raised or otherwise repaired by the Company in accordance with Section 5.2 of this standard.

If and when an instance of inadequate notification comes to the attention of the Company, the instance shall be documented by the Company, and at the appropriate interval, brought to the attention of the responsible Governmental Agency. Records of such occurrences shall be maintained by the Company and submitted to the Massachusetts Department of Public Utilities in accordance with Section 8 of this gas standard.

8. REPORTING REQUIREMENTS

The Company must submit a report to the Massachusetts Department of Public Utilities, documenting instances of inadequate notification by Governmental Agencies. The report should include the following.

- a. The date when the instance of inadequate notification comes to the attention of the Company.
- b. The date when the Company brought each instance to the attention of the responsible Governmental Agency.



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The Company must submit those reports covering the prior calendar year with the Massachusetts Department of Public Utilities no later than March 31 of each year.