Protecting Gas Facilities from Vehicles & Other Damage

October 27, 2011
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Discussion
Natural Gas & Propane Facilities

- Federal Regulations
- State Rules & Regional Differences
- Photographic Examples
  - The Good
  - The Bad
  - The Interesting
§ 192.353 Customer Meters and Regulators: Location.

(a) Each meter and service regulator, whether inside or outside a building, must be installed in a readily accessible location and be protected from corrosion and other damage, including, if installed outside a building, vehicular damage that may be anticipated. However, the upstream regulator in a series may be buried.
Federal Regulations


(b) Service regulator vents and relief vents. Service regulator vents and relief vents must terminate outdoors, and the outdoor terminal must:

(3) *Be protected from damage caused by submergence in areas where flooding may occur.*
Federal Regulations

Part 192, Subpart P – Gas Distribution

Integrity Management

\[\text{§192.1007(b) & §192.1015(b)(2) Identify Threats}\]

Among the threats that must be considered by both sections is “Other Outside Force Damage”.
Federal Regulations

§192.11 Petroleum Gas Systems.

NFPA 58 (2004)

§ 6.6.1 Installation of Containers, General Requirements.

§ 6.6.1.2 *LP-Gas containers or systems of which they are a part shall be protected from damage from vehicles.*
NFPA 58 (2004)

§6.6.6 Installation of Underground and Mounded Containers.

§6.6.6.1(C) Protection shall be provided for the fitting housing, housing cover, tank connections, and piping against vehicular damage.

§6.6.6.1(D) Where containers are installed underground within 10 ft (3 m) of where vehicular traffic can be expected, protection against vehicular damage shall be provided for the fitting housing, housing cover, tank connections, and piping.
NFPA 58 (2004)

§6.8.3 Installation of Metallic Pipe, Tubing, and Fittings.

§6.8.3.10 Aboveground piping shall be supported and protected against physical damage by vehicles.
NFPA 58 (2004)

§ 6.15.5 Installation of Meters.

§ 6.15.5.3 Vapor meters shall be installed so as to minimize the possibility of physical damage.
## State Rules
### In Addition to Part 192

<table>
<thead>
<tr>
<th>State</th>
<th>Natural Gas</th>
<th>Propane</th>
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<tbody>
<tr>
<td>Connecticut</td>
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<td>Massachusetts</td>
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<td>Maine</td>
<td>Ch. 420 5.B.2.&amp;3.</td>
<td>Ch. 421 5.B.1.&amp;2.a.</td>
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<td>New Hampshire</td>
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<td>Rhode Island</td>
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<td>Vermont</td>
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§5.B.2. Gas meters, regulators, and aboveground pipeline facilities located in areas subject to vehicular damage shall be provided adequate protective barriers on each side exposed to vehicular traffic. Operators that have above-ground piping and appurtenances at commercial and industrial premises shall consider the potential for damage to the gas facilities from equipment used in the operation and maintenance of that facility and provide adequate protection.

§5.B.3. Regulators, meters, and other equipment installed in the piping system shall be protected from the forces anticipated as a result of accumulated snow or falling snow and/or ice.
Maine
Rule Chapter 421 (Propane)

§ 5.B.1. Gas meters, aboveground tanks, domes of underground tanks, and distribution system facilities located adjacent to a roadway, street, alley, driveway, easement or otherwise susceptible to damage from motor vehicles shall be provided protective barriers on each side exposed to vehicular traffic.

§ 5.B.2.a. Regulators, meters, and other equipment installed in the piping system shall be protected from the forces anticipated as a result of accumulated snow or falling snow and/or ice.
What do all rules and regulations, pertaining to facility protection, have in common?

They Are Subjective.

- To interpretation by individuals;
- State by State interpretations & expectations; and
- Regional interpretations & expectations.
Is the Fence Adequate for Vehicle Protection?
Is a Single Bollard Adequate?
What Looks OK in the Summer;

May Not Be in the Winter.
Should This Installation Have Vehicle Protection?
Aftermath of a Car Hitting a Meter
Muskegon, Michigan 9/26/11
Propane Facility Photos
Are Diagonal Lines Adequate for Protection From Vehicles?
Bollards Good for Vehicles Straight On.
Underground Tank Dome?
Trash Receptacle?
Or Both?
Yes, It’s a Multipurpose Facility.

Number: 1075

What Are the Bollards For?
Is the Fence Adequate Protection?
We Don’t Think So.

But the Risers Are Well Protected.
Risk From Vehicles, Erosion, & Flooding?
Excellent Guardrail for Vehicle Protection.
Looking From the Other Side, This is Why it Was Used.
Water Valves Protected.
Mounting a Meter High Isn’t Always Without Risk.
Separation From Building
Ice Damage to Facilities Averted.
The New Standard for Tank Protection?
THE END
Thank You!