NTSB Recommendations from Silver Springs, MD Incident

XXX State Seminar

Incident

An explosion and fire occurred on August 10, 2016 at 11:51 pm EST at an apartment complex located in Silver Spring, Maryland

Incident

14 units in the apartment building partially collapsed due to a natural gas-fueled explosion and fire

Incident

7 residents died

65 resident were transported to the hospital

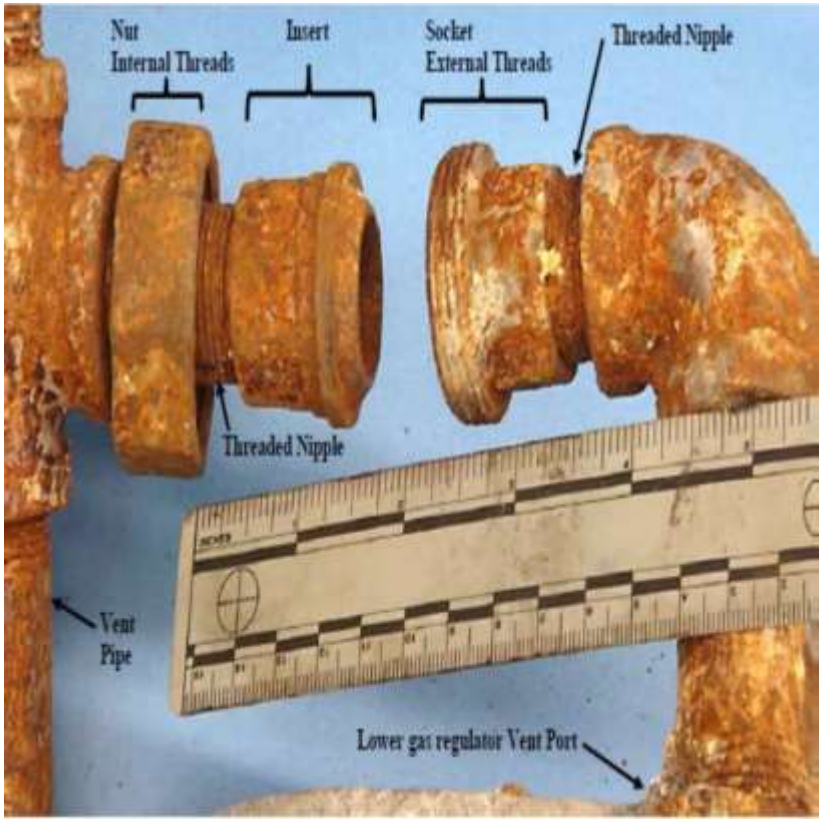
3 firefighters were transported and released from the hospital

Incident Cause

The failure of an indoor mercury service regulator with an unconnected vent line that allowed natural gas into the meter room where it accumulated and ignited from an unknown ignition source.

Incident Cause

The actual photo of the unthreaded union.



NTSB Recommendations

Require that all new service regulators be installed outside occupied structures. (P-19-001)

Require existing interior service regulators be relocated outside occupied structures whenever the gas service line, meter, or regulator is replaced. In addition, multifamily structures should be prioritized over single-family dwellings. (P-19-002)

Enforcement Implications

- Individual Code Enforcement under 49 CFR Part 192, Subpart H – Customer Meters, Service Regulators, and Service Lines (192.353, 192.355, 192.357, etc.)
- Individual Code Enforcement under 49 CFR Part 192, Subpart I – Requirements for Corrosion Control (192.481)
- Individual Code Enforcement under 49 CFR Part 192, Subpart L – Operations (192.615)
- Individual Code Enforcement under 49 CFR Part 192, Subpart M – Maintenance (192.723)
- Programmatic Enforcement under 49 CFR Part 192, Subpart P – Distribution Pipeline Integrity Management (DIMP)

Enforcement Implications - DIMP

- 192.1007(a) – Knowledge: Do you know the location, type, maintenance, and leak call history of ALL your system's inside meter sets? *Can you demonstrate this to an inspector?*
- 192.1007(b) – Identify Threats: "An operator must consider reasonably available information to identify existing and potential threats. Sources of data may include, but are not limited to, incident and leak history, corrosion control records, continuing surveillance records, patrolling records, maintenance history…"
- NOTE: It's not just *YOUR* system's incident history! NRC 1155909 (Silver Springs) has put the entire gas distribution industry on notice with respect to indoor meter sets as a system integrity risk.

Enforcement Implications – DIMP (cont.)

- 192.1007(d) – Identify and Implement Measures to Address Risks:
  - Address the possible need for specific measures to address sub-categories of inside meter set risks, e.g., meter types, multi-unit buildings, special venting issues, etc.
  - Special/Accelerated AC & Continuing Surveillance Patrols
  - Vent testing/Replacement/Move out Programs
  - "Red tag" and shut-in as an explicitly considered option to remove risk
  - Others?
- 192.1007(f) – Periodic Evaluation and Improvement: "An operator must re-evaluate threats and risks…". If you haven't re-evaluated your DIM program with respect to Silver Springs and other incidents – WHY NOT?

Areas to Consider when installing and inspecting inside service regulators

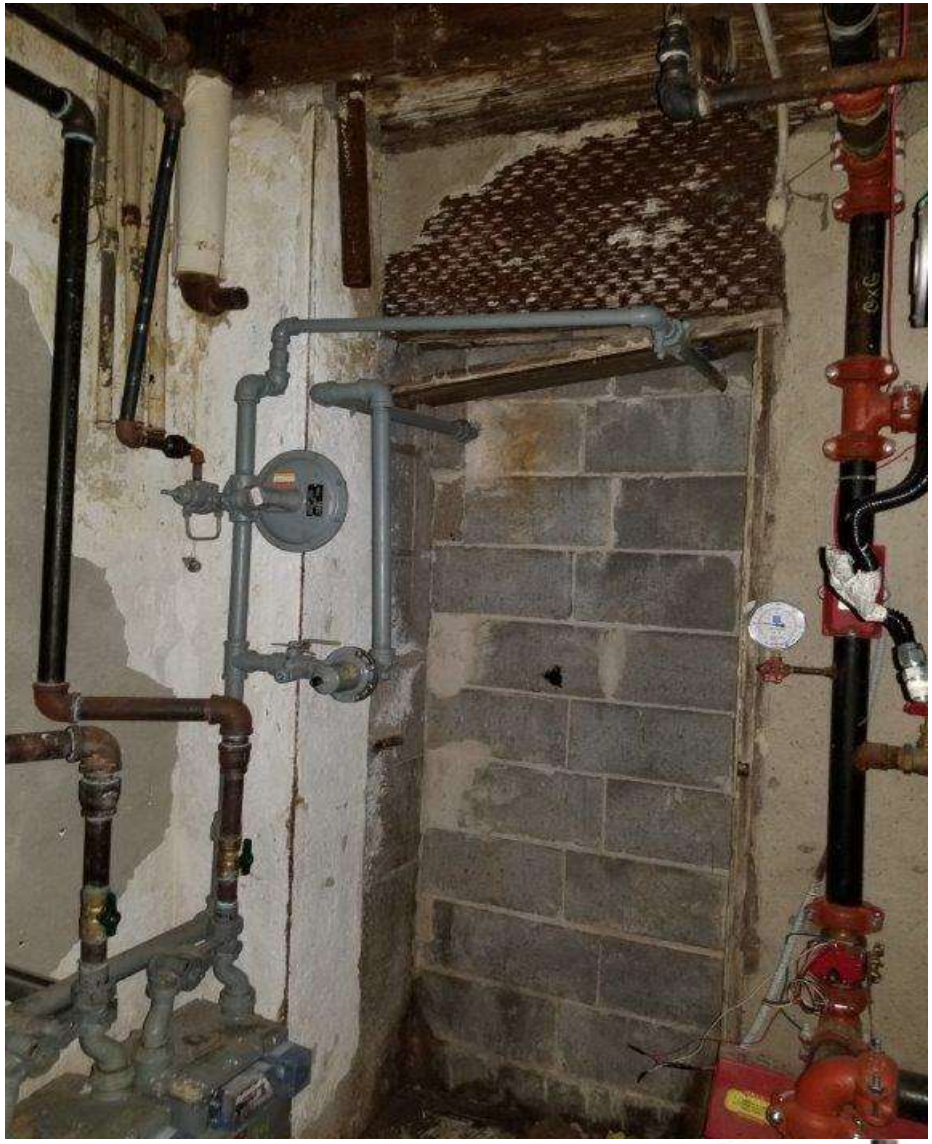
192.199

(e) Have discharge stacks, vents, or outlet ports designed to prevent accumulation of water, ice, or snow, located where gas can be discharged into the atmosphere without undue hazard;

(f) Be designed and installed so that the size of the openings, pipe, and fittings located between the system to be protected and the pressure relieving device, and the size of the vent line, are adequate to prevent hammering of the valve and to prevent impairment of relief capacity;

192.355 (b)

Requiring service regulators to terminate outdoors

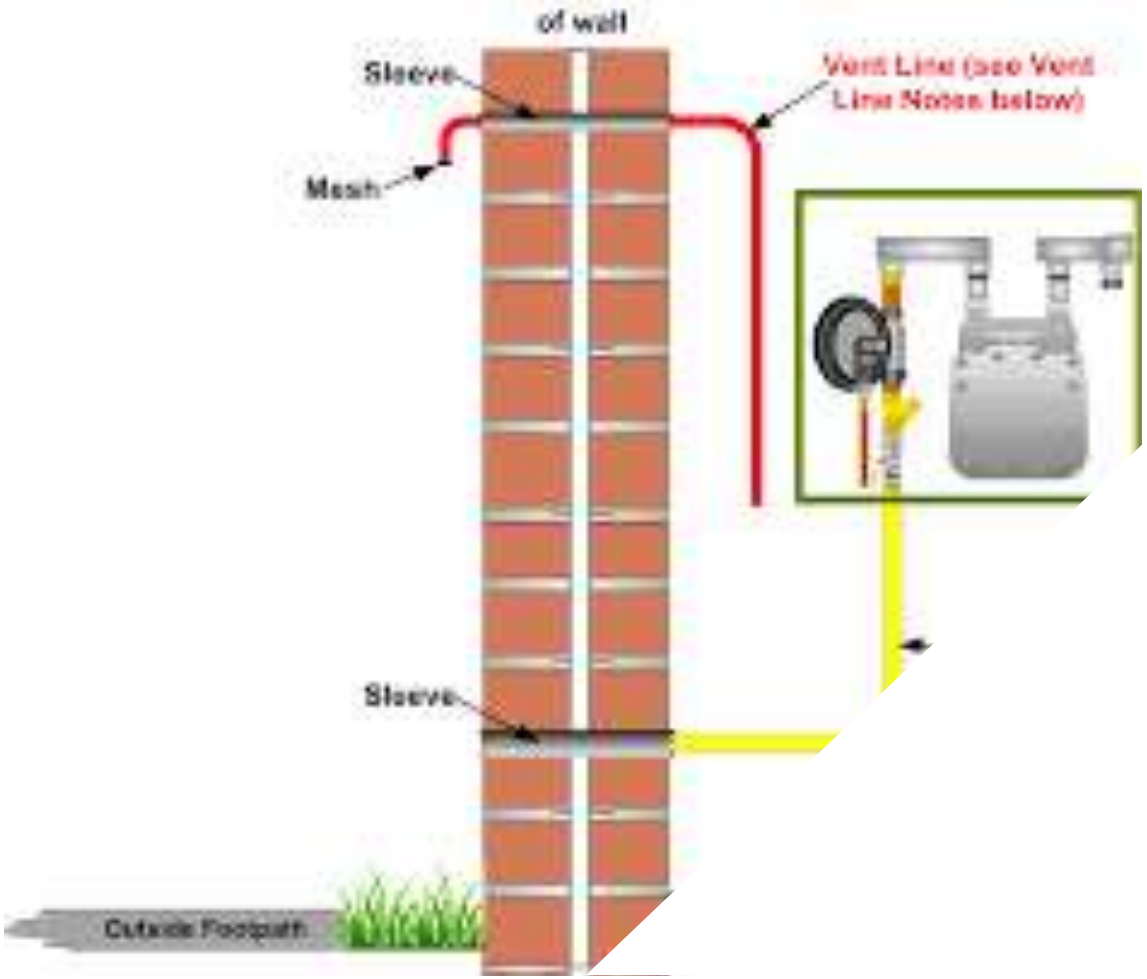


192.355 (b) (1)

Must – Be rain and insect resistant

192.355 (b) (2)

Be located at a place where gas from the vent can escape freely into the atmosphere and away from any opening into the building



Not properly vented outside

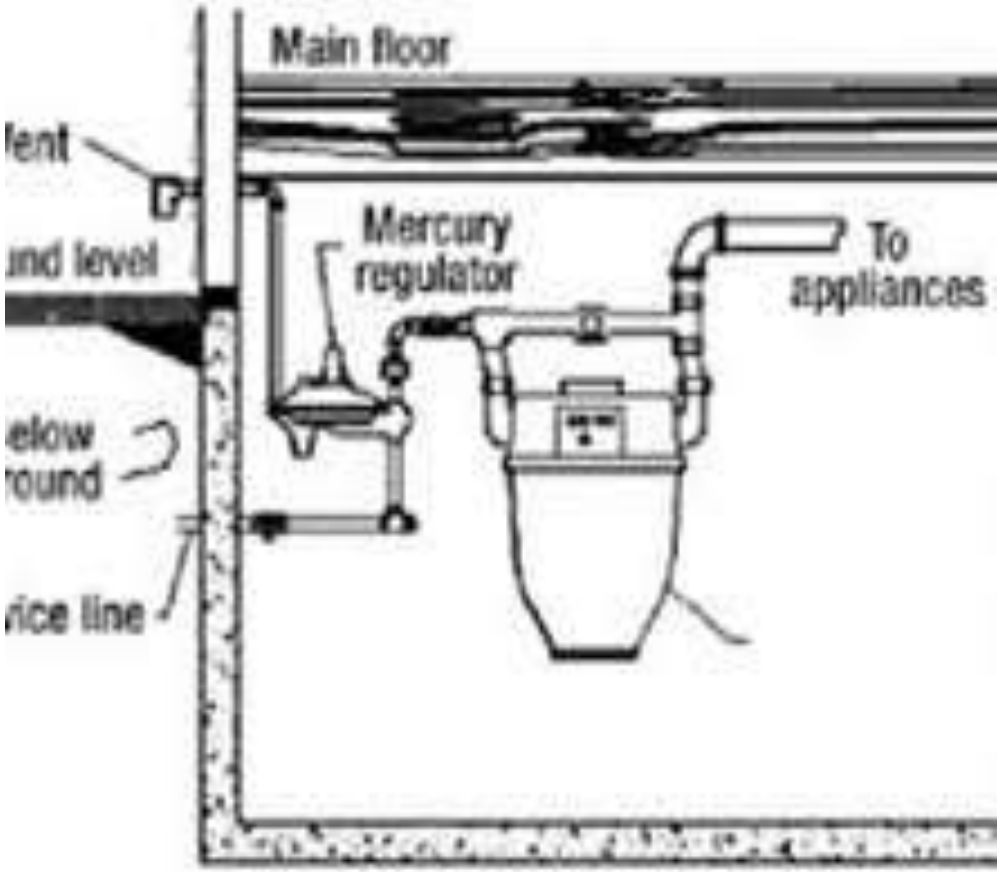
Not properly vented outside

Recommendation

Install service regulators away from an ignition source

192.357 (d)

Requires regulators that might release gas to be vented to the outside atmosphere



192.353 (a) (b)

Requires each service regulator to be located in a readily accessible location, and that if service regulators are installed in a building they must be located as near as practical to the service line entrance to the building.

192.353 (a)

Gas service regulators must be installed in readily accessible location.

192.353 (c)

Each meter installed within a building must be located in a ventilated place.

192.353 (c)

Inside meter must be not less than 3 feet from any source of ignition.

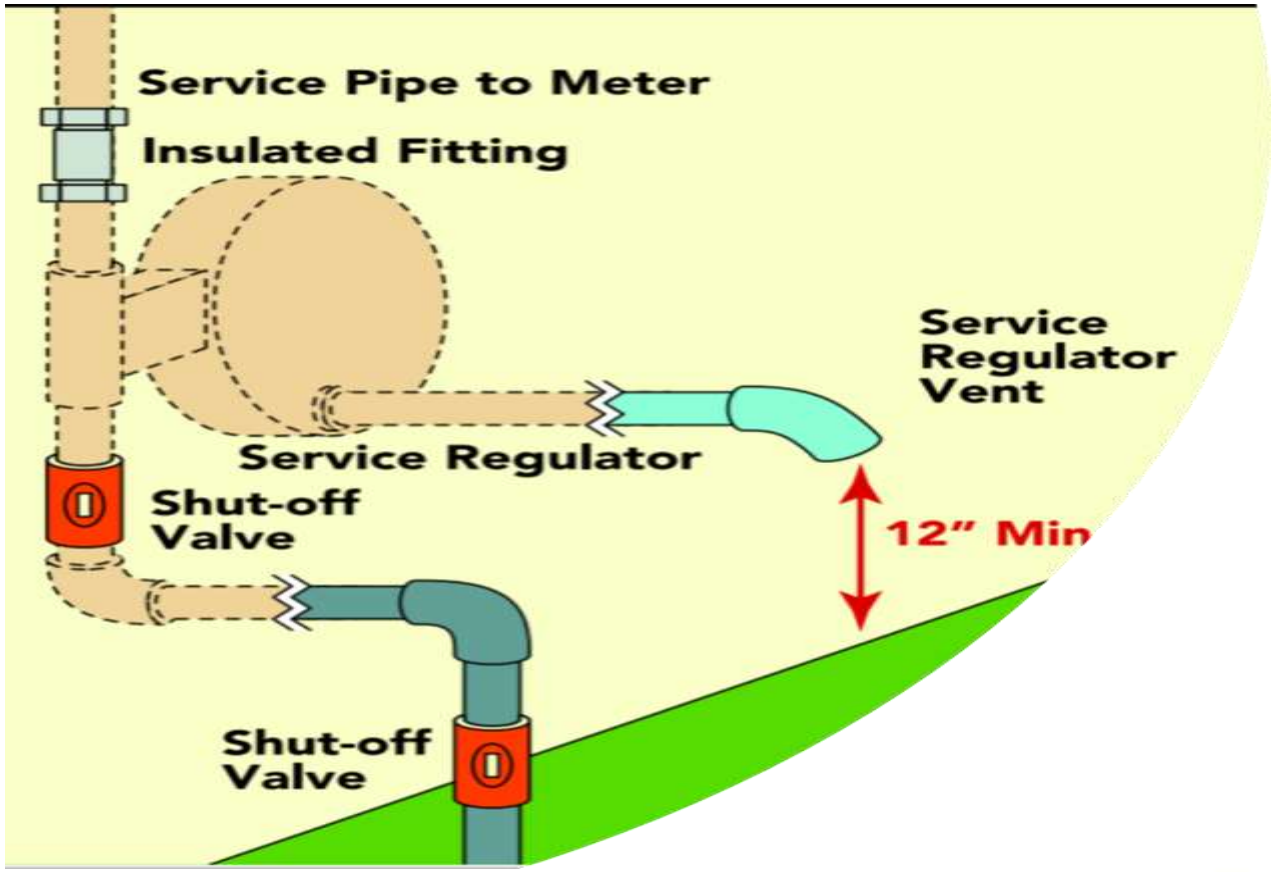
192.723

- The following leakage surveys are required for inside and outside piping up to the outlet of the gas meter.
- Business districts at intervals not exceeding 15 months, but at least once each calendar year.
- Outside business districts as frequently as necessary, but at least once every five calendar years at intervals not exceeding 63 months for plastic and cathodically protected lines; cathodically unprotected distribution lines every 3 calendar years at intervals not exceeding 39 months.

192.481

Perform Every 3 years, Not To Exceed 39 months for inside and outside piping up to the outlet of the meter.

Other areas to consider – Inside service regulators



Make sure vent line is not corroded

Proper size venting for the regulator

Not properly sized vent

Vent line paved over with asphalt

Metallic pipe not PVC

- PVC can create static electricity
- Metallic piping will create structural integrity

Perform Visual Inspections and Observations on Inside Gas Pipelines

Make Sure All Piping Inside a Structure is Connected

The Best Practice Is Relocate Service Regulators and Gas Meters Outside

QUESTIONS???