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Office of Pipeline Safety

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MNOPS Alert Notice - 02 - 2020

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Purpose

This Alert Notice provides guidance and recommendations for intrastate Minnesota gas pipeline operators on designing and operating their pipeline systems with specific reference to inside meter sets, low-pressure distribution systems and engineering management.

Applicable Regulations

- I) 49 CFR Part §192 Subpart C – Pipe Design
- II) 49 CFR Part §192 Subpart D – Design of Pipeline Components
- III) 49 CFR Part §192 Subpart M – Maintenance
- IV) MN Statute 326 – Architects, Engineers, Surveyors

Background

Three specific natural gas pipeline incidents have received national attention in recent years. The National Transportation Safety Board (NTSB) conducted investigations into these incidents and made recommendations to industry stakeholders. The incidents are:

- Silver Spring, Maryland: Inside Meter Sets
- Merrimack Valley, Massachusetts: Low-Pressure Distribution Systems
- Minnehaha Academy, Minnesota: Meter Move-Out Work & Deactivation of Facilities.

Silver Spring, Maryland: Inside Meter Sets

On Aug. 10, 2016, a 14-unit apartment building in Silver Spring, Maryland, collapsed due to an explosion caused by natural gas. Seven residents of the building were killed and 68 people were injured.

According to the NTSB investigation report, “the cause of the explosion was a disconnected service regulator vent line, which allowed natural gas to fill the utility room in which the meter bank was located.” Operators should review the [NTSB report with recommendations](#) and the [PHMSA advisory bulletin](#) for the incident.

Merrimack Valley, Massachusetts: Low-Pressure Distribution Systems

On Sept. 13, 2018, in Merrimack Valley, Massachusetts, a high-pressure natural gas distribution system operating at 75 psig over-pressurized a downstream low-pressure distribution system operating at 0.5 psig during construction at a regulator station between the high and low-pressure systems. The resulting incident damaged 131 structures, including at least five homes. One individual was killed and 28 others injured.

According to the NTSB investigation report, “the probable cause of the over-pressurization of the natural gas distribution system was weak engineering management that did not adequately plan, review, sequence, and oversee the construction project.”

Among others, NTSB made the following recommendations in its final report.

- PHMSA should “Revise Title 49 Code of Federal Regulations Part 192 to require over-pressure protection for low-pressure natural gas distribution systems that cannot be defeated by a single operator error or equipment failure.”
- States should “Eliminate the professional engineer licensure exemption for public utility work and require a professional engineer’s seal on public utility engineering drawings”.

[Minnesota Statute 326.02 Subd. 3](#) defines professional engineering in Minnesota. Operators should review the [NTSB report with recommendations](#) and [the PHMSA advisory bulletin](#) for the incident.

Minnehaha Academy, Minnesota: Meter Move-Out Work & Deactivation of Facilities

On Aug. 2, 2017, Minnehaha Academy was destroyed by a natural gas explosion. Two individuals were killed and nine others injured. The incident occurred while work was being completed on an indoor meter set located in the basement of the building, in preparation for relocating the meter outdoors.

According to the NTSB investigation report, “the probable cause of the natural gas explosion was the disassembling of pressurized gas piping upstream of the gas service meter in the building by a pipefitting crew, resulting in the release of natural gas, which subsequently ignited. Contributing to the accident was the lack of detailed documentation that established the scope of work to be performed.”

Operators should review the following documents regarding this incident:

[NTSB report and recommendations for the Minnehaha Academy.](#)

[Minnesota Office of Pipeline Safety \(MNOPS\) Alert Notice 01-2018.](#)

Recommendations to Operators

Based on the information above, operators should also consider the following for their pipeline system:

- Review procedures for inspection of meter sets, after construction and in-operation, to ensure vents are properly connected and terminated outside.
- Review low-pressure distribution systems for overpressure protection.
- Review engineering management processes for gas infrastructure projects that may require a licensed Professional Engineer approval. Operators should review the requirements of MN Statute 326 to determine what pipeline planning, design, and oversight may require a Professional Engineer approval. Minnesota law does not have an exemption for utility professional engineering work.
- Review documentation of work specified to contractors working for operators to ensure the scope of work is clearly explained and understood.
- Review procedures for abandonment and deactivation of pipeline facilities. Ensure that the valves required for isolation are maintained and operated prior to commencing work. Review maps and records to ensure that all sources of gas supply are identified and isolated.

Please contact our office if you have any questions regarding this alert notice.

Office of Pipeline Safety

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