



ADVISORY NOTICE

[date]



To: Telecommunications Companies
From: Missouri Public Service Commission, Safety Engineering Staff
Subject: **Advisory Regarding Installation of Underground Cable and Conduit**
Advisory Topics: 1. Background on Excavation Damages
2. Missouri Statutes Regarding Excavations
3. Applicable Standards
4. Additional Resources

The purpose of this **Advisory Notice** is to inform telecommunications companies of a potential hazard associated with unsafe excavation practices, to provide an outline of applicable Missouri Statutes and standards, and to provide links to resources for additional information.

1) **Background on Excavation Damages**

In calendar year 2023, excavation activities resulted in 2,780 damages to underground natural gas distribution pipelines in Missouri, an average of more than 7 damages per day.¹ **Almost half** (47%) of these damages were caused by excavators not digging safely after the locations of underground gas facilities had been marked by the gas utility. The consequences of excavation damages to natural gas pipelines can range from minor to tragic (e.g. injury or death).

On March 1, 2022, in O'Fallon Missouri, a natural gas pipeline was damaged by an excavator installing a fiber line using horizontal directional drilling. Gas escaping from the damaged pipeline migrated underground and into nearby residences. One residence was destroyed when the accumulated gas ignited (see Figure 1), and other nearby residences were also damaged. The location of the natural gas pipeline had been accurately marked, but the excavator failed to maintain a safe distance from the marks (See the ***Applicable Standards*** section of this **Advisory Notice**).

¹ Source – Data Reported to the Pipeline and Hazardous Materials Safety Administration, [Gas Distribution, Gas Gathering, Gas Transmission, Hazardous Liquids, Liquefied Natural Gas \(LNG\), and Underground Natural Gas Storage \(UNGS\) Annual Report Data | PHMSA \(dot.gov\)](https://www.phmsa.dot.gov/data-reports/gas-distribution-gathering-gas-transmission-hazardous-liquids-liquefied-natural-gas-lng-and-underground-natural-gas-storage-ungsa-annual-report-data)



Figure 1: View of 3 Miller's Ct. driveway and debris from house explosion, taken on March 2, 2022 following the incident
(Source: Appendix B of Staff Incident Report filed April 26, 2023 in Case No. GS-2023-0372)

On June 26, 2023, in Mountain Grove Missouri, a natural gas pipeline was damaged by an excavator installing a fiber optic line using horizontal directional drilling. The excavator's bore head struck a pipeline that the excavator was crossing. Gas escaping the damaged pipeline migrated underground into nearby structures, accumulated within a nearby detached garage, and ignited. There was extensive damage to the garage structure and the two vehicles parked within. The locations of natural gas pipelines had been accurately marked on the pavement surface, but the excavator failed to expose the location of the marked pipeline as required by Missouri Law (See the *Missouri Statutes Regarding Excavations* section of this Advisory Notice).

2) Missouri Statutes Regarding Excavations

The Revised Statutes of Missouri (RSMo) include the “*Underground Facility Safety and Damage Prevention Act*” in RSMo Sections 319.010 to 319.050. [Missouri Revisor of Statutes - Revised Statutes of Missouri, RSMo Section 319.010](#)

Section 319.025 requires excavators to notify the “notification center” (**Missouri 811**) before excavating. Locate notifications can be made by phone (calling 811) or by placing a request on-line at [Missouri 811 | Click or Call 811 Before You Dig \(missouri-811.org\)](#).

Additionally:

- Section 319.035 imposes a general requirement that excavations be conducted in a careful and prudent manner. Excavation is defined in Section 319.015(4) and includes backfilling, trenching, digging, ditching, drilling, augering, boring, cable or pipe plowing, plowing-in, and pulling-in.

- Section 319.037 specifically addresses requirements for underground installations using trenchless excavation, including horizontal boring equipment. The excavator must make “careful and prudent efforts to confirm the horizontal and vertical location” of an underground facility when using horizontal boring in the “marked approximate location” of an underground facility. This can be performed with methods such as potholing. A pothole is a hole dug by non-mechanical means (e.g., hand-dig, soft-dig with air tools) to expose an underground facility to verify its location and depth, and allows visual confirmation that the underground facility is not damaged by the boring device. For excavations paralleling the underground facility, such efforts to confirm the location of the facility shall be made at careful and prudent intervals.
- Section 319.026 addresses actions to be taken if an underground facility is damaged or contacted, including immediate notification to 911 when any damage or contact with a pipeline results in a release from the pipeline of hazardous liquid or gas to occur. Notification to Missouri 811 is also required.

3) **Applicable Standards**

Commission rule 20 CSR 4240-18.010 provides Safety Standards for Electrical Corporations, Telecommunications Companies, and Rural Electric Cooperatives. It requires those who excavate near underground facilities or conduct activities within ten feet of overhead power lines to notify area utilities prior to engaging in such action, pursuant to the **Underground Facility Safety and Damage Prevention Act**, section 319.010, RSMo, and the Overhead Power Line Safety Act, section 319.075, RSMo, and adopts requirements of the **National Electric Safety Code (NESC)**.

Part 3, Section 32 of the NESC applies to telecommunication cables installed in an underground conduit system and Rule 320B5 for conduit systems requires providing for **at least 12 inches of separation between communications facilities and gas lines** unless there is an agreement to less separation by all involved utilities.

4) **Additional Resources**

Missouri 811 provides information and training modules for excavators on its website [Resources | Missouri 811 \(missouri-811.org\)](https://missouri-811.org)

The Common Ground Alliance (CGA) provides a *Best Practices Guide* for Damage Prevention & Safety. This guide can be searched by topic on-line at: [Best Practices Guide \(commongroundalliance.com\)](https://commongroundalliance.com)