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Alert Notice-MNOPS AL-02-2010 to Natural Gas Pipeline Operators

Protecting Above Ground Pipelines: Acceptable Practices and Documentation Requirements

Date:

April 15, 2011

Purpose:

The purpose of this Alert Notice is to provide guidance for gas pipeline operators on acceptable practices and documentation requirements for protecting above ground pipelines.

Guidance Pertains to the Following Codes:

1. §192.317 Protection from hazards.
2. §192.353(a) Customer meters and regulators: Location.
3. §192.361(d) Protection against piping strain and external loading.
4. §192.605 Procedural Manual for Operations, Maintenance, and Emergencies
5. §192.613 Continuing Surveillance
6. §192.617 Investigation of failures
7. §195.254 Above ground components.

Background:

The Minnesota Office of Pipeline Safety (MNOPS) had communications with the gas distribution pipeline operators regarding Customer Meter Set Barricading in 2004 which included the posting of “Standard Operating Guidelines,” Customer Meter Sets.

Statewide incidents have brought focus on the importance of location and protection of above ground pipelines. The necessity of adequate locating and protection of above ground pipeline procedures becomes apparent in certain circumstances.

The following *Acceptable Practices and Documentation Requirements* were developed following a review of PHMSA reports, case review of statewide above ground pipeline incidents, research of statewide above ground pipeline damages, case review of nationally reported above ground pipeline incidents and discussions with gas distribution and transmission pipeline operators.

Acceptable Practices and Documentation Requirements:

The Federal Code of Regulations requires gas pipeline operators to write a plan to minimize vehicular damage to above ground pipelines that may be anticipated. The following practices and documentation requirements have been established to protect life and property through acceptable protection of above ground pipelines.

Legacy installations:

Legacy installations (pre-code) that have not been replaced, relocated, or otherwise changed to the requirements in 49CFR Parts 192 & 195 may not need to meet the requirements of this Alert Notice. All installations constructed after the effective date of 49CFR Parts 192 & 195 must comply with these requirements. Pipeline operators must maintain records documenting compliance.

Protection is required in the following situations:

1. Determination Method

- a) A barricade is required where the edge of the travel lane is within 10 feet of a pipeline or customer meter.
- b) A barricade is required where a licensed motor vehicle can park or drive by, including driveways and alleys, within 5 feet of an uncurbed pipeline or customer meter. A curb is considered to be adequate if it is continuous and parallel to the direction of normal vehicular travel. The extension of the vehicle's front or rear extremities shall be considered. (examples: driveway or detached garage)
- c) A barricade is required at any location that is susceptible to vehicular stresses or forces that have the ability to damage a pipeline or customer meter. Consideration shall be given to roadway speed limit. (Example: dumpsters, areas subject to off-road vehicle traffic, including snowmobiles, maintenance vehicles, snow plows, skid loaders, fork trucks, etc.)

2. Operator Defined Method

An operator may elect to implement its own requirements and procedures for protection of above ground pipelines. All plans and procedures will be evaluated for adequacy. Methods to substantiate the adequacy of plans and demonstrate compliance may include the following: documentation regarding relevant studies and research performed, engineering principles applied, or any mathematical calculations.

Acceptable Vehicle Impact Protection:

In locations requiring vehicle impact protection, the barricade must be either designed or selected using one of the methods listed:

1. Anticipated Loading Method

Each pipeline barricade must be tested or designed to resist any anticipated loading.

All barricade designs will be evaluated for adequacy.

2. Model Code Method*

- i) “Guard posts” shall comply with all the following requirements
 - a) Constructed of steel not less than 4 inches in diameter and concrete filled.
 - b) Spaced not more than 4 feet between posts on center.
 - c) Set not less than 3 feet deep in a concrete footing of not less than 15-inch diameter.
 - d) Set with the top of the posts not less than 3 feet above ground.
 - e) Located not less than 3 feet from the protected object.

- ii) Other Barriers “Physical barriers shall be a minimum of 36 inches in height and shall resist the force of 12,000 pounds applied 36 inches above the adjacent ground surface.

*2000 International Fire Code, Section 312/ 2007 Minnesota Fire Code, Section 312

3. Relocation Method

Relocating the above ground pipeline to a location where it is no longer susceptible to vehicular damage that may be anticipated fulfills the requirement of this Alert Notice.

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