

Marking Liquid Petroleum Pipeline Facilities

Downstream Segment

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Introduction

Pipelines are, for the most part, buried conduits. As such, they operate safely, quietly, and hidden from view, with little disruption to the public or the surrounding environment. These attributes, which are highly desirable in any mode of transportation, generate the need for an organized system of markers and signs that visually alert the public to the presence of a pipeline and provide a contact number of the Pipeline Operator that can be used in the event of an emergency or before excavating near pipelines. Strategic placement of markers and signs also helps the pipeline operator to perform right-of-way surveillance, inspections and other day-to-day activities. Pipeline markers are an integral component of an Operator's damage prevention and public awareness programs.

This RP was prepared by a committee composed of representatives from pipeline operating companies. Its purpose is to present guidelines concerning the design, fabrication, installation, and maintenance of permanently installed pipeline markers and signs.

Marking Liquid Petroleum Pipeline Facilities

1 Scope

1.1 This recommended practice (RP) addresses the permanent marking of hazardous liquid pipeline transportation facilities. It covers the design, message, installation, placement, inspection, and maintenance of markers and signs on pipeline facilities located onshore and at inland waterway crossings. Markers and signs indicate the presence of a pipeline facility and warn of the potential hazards associated with its presence and operation. The markers and signs may contain information to be used by the public when reporting emergencies and seeking assistance in determining the location of a buried pipeline.

1.2 The provisions of this RP cover the minimum signage (markers and signs) requirements for hazardous liquid pipeline facilities. The pipeline operator is responsible for determining the type and extent of signage. Consideration should be given to the hazardous characteristics of the commodity being transported; the pipeline's proximity to industrial, commercial, residential, and environmentally sensitive areas; susceptibility to excavation-related damage; consequences of failure; and applicable state and federal laws. Several examples of markers and signs with locations are illustrated in Figure 1, Figure 2, Figure 3, Figure 4, Figure 6, and Figure 8. The pipeline marking programs are integral components of the pipeline operator's operations, maintenance and emergency plans, damage prevention programs, and public awareness programs.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ASME B31.4 ¹, *Liquid Transportation Systems for Hydrocarbons, Liquid, Petroleum Gas, Anhydrous Ammonia, and Alcohols*

49 *Code of Federal Regulations* Part 195 ², "Transportation of Hazardous Liquids by Pipeline"

3 Terms and Definitions

For the purposes of this document, the following definitions apply.

3.1

aerial patrol or air patrol marker

A marker observable from the air, which is used to identify a pipeline's reference location by the aerial patrol pilot while conducting aerial surveillance of a pipeline right-of-way.

NOTE Information on the marker might consist of distance from a point of reference, usually in miles, name or numbers of above ground facilities, direction of the ROW, a Point of Intersection (PI) where the ROW turns, or other information useful to the pilot.

3.2

hazardous liquid

Petroleum, petroleum products, anhydrous ammonia or carbon dioxide and any substance that may pose an unreasonable risk to life or property when transported by a hazardous liquid pipeline facility in a liquid state.

¹ ASME International, 3 Park Avenue, New York, New York 10016-5990, www.asme.org.

² The *Code of Federal Regulations* is available from the U.S. Government Printing Office, Washington, DC 20402.