Design, Construction, Operation, Maintenance, and Inspection of Terminal & Tank Facilities

API STANDARD 2610
SECOND EDITION, MAY 2005

API
American Petroleum Institute

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Downstream Segment

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FOREWORD

This standard was developed to guide the management of terminals and tanks in a manner that protects the environment and the safety of workers and the public. This standard is intended for petroleum terminal and tank facilities associated with marketing, refining, pipeline, and other similar facilities. This standard may be used as a resource and management guide by those responsible for such facilities and by those working on their behalf. This standard is a compilation of industry knowledge, information, and management practices for all relevant aspects of terminal and tank operations aggregated into an overview document comprising best practices. In instances where greater detail or additional information may be helpful or needed, this standard references other API publications or similar industry guides and standards. It is intended to be consistent with, but is not a substitute for, any applicable local, state, or federal regulations.

The requirements of this standard represent minimum requirements applicable to all facilities within the scope of this document. Some provisions in this standard, as indicated by the use of the word shall, are mandatory and have to be followed to meet the intent of this standard. Some provisions are recommended, as denoted by the word should, but are not mandatory. These provisions will need to be considered based on site-specific factors. Still other provisions are optional, as denoted by the word may. Typically, these will be given where a range of good options exists.

To foster greater awareness and assist the industry in addressing environmental, health, and safety concerns, the API has undertaken the development of this single document aggregating the various standards, specifications, and recommended practices on the design, construction, operation, inspection, and maintenance of petroleum terminals and tanks. API also has significant research underway to assist members in addressing issues of groundwater protection and remediation of soil contamination. This research includes the evaluation of improved leak detection technology and the evaluation of better methods to detect and remediate groundwater and soil contamination.

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1 General

1.1 SCOPE AND PURPOSE

This standard covers the design, construction, operation, inspection, and maintenance of petroleum terminal and tank facilities associated with marketing, refining, pipeline, and other similar activities as stipulated in 1.1.1 through 1.1.7. This standard covers the issues of site selection and spacing, pollution prevention and waste management, safe operation, fire prevention and protection, tanks, dikes and berms, mechanical systems, product transfer, corrosion protection, structures, utilities and yard, and removals and decommissioning.

The purpose of this standard is to consolidate a wide base of current industry experience, knowledge, information, and management practices into a cohesive standard comprising a range of best practices.

Mandatory requirements in this standard are designated by the word "shall" or "must." Recommendations are designated by the use of the word "should." Optional items are designated by the word "may" (refer to Section 3). This standard incorporates by reference a number of other standards and recommended practices. The distinctions between mandatory, recommended, and optional provisions in the referenced documents are not changed by the nature of their reference in this standard.

The values stated for this standard are in U.S. Customary units with the International System of units (SI) provided in parentheses.

The petroleum industry is engaged in the manufacture, storage, transportation, blending, and distribution of crude oil and refined products. Individual terminal facilities and plants may perform one or more of these functions. These facilities represent diverse operations ranging from small distribution facilities (e.g., bulk plants and warehouses), to large storage and distribution facilities (e.g., pipeline and marine terminals and wholesale plants), and large integrated facilities (e.g., petroleum refineries, and grease production, oil blending and packaging plants). The specific application of this standard within those various types of operations is itemized in 1.1.1 through 1.1.7.

1.1.1 Petroleum Terminals

Petroleum terminals may include tank farms, loading and unloading areas, pipeline manifolds, storage areas, warehouses, docks, garages, laboratories, and office buildings. Products may be received and distributed by pipeline, marine transport, rail, or truck. Bulk quantities of refined products are stored in aboveground tanks for distribution in smaller quantities to industrial customers, to commercial consumers, and to retail and wholesale marketing facilities. Petroleum terminals may also store petroleum products in consumer packaging, bulk containers, inside tanks and drums.

1.1.2 Pipeline Tankage Facilities

Pipeline tankage facilities consist of tanks and tank farms used to receive petroleum (crude oil and refined products) from pipelines, trucks, railcars, or marine facilities and to provide surge relief from pipeline operations (see Office of Pipeline Safety, Research and Special Programs Administration regulation 49 *CFR* Part 195 and the U.S. Coast Guard regulation 33 *CFR* Parts 154 and 156).

1.1.3 Refinery Facilities

Provisions for loading and unloading areas, docks, blending and packaging facilities, warehouses, and some refinery tankage facilities are included in this standard. Refinery tankage covered by this standard does not include those aboveground tanks or groups of tanks as defined in 1.2.c (e.g., process tanks).

Examples of covered refinery tankage include tanks that are used to accomplish the following:

a. Receive incoming crude oil.
b. Store intermediate products or components outside of the refinery process units.
c. Store finished products for shipment by truck, marine transport, rail, or pipeline.

Examples of refinery tankage and other equipment specifically excluded are as follows:

a. Tanks and equipment that are integral to refinery process equipment.
b. Refinery tanks and other equipment located within the battery limits of process units.
c. Process equipment located outside the process unit battery limits.
d. Tanks that contain materials, such as additives, used in refinery processes or utility systems.

1.1.4 Bulk Plants

Although bulk plants typically handle smaller quantities of product, operations and facilities at these plants are similar to those at petroleum terminals. Bulk plants typically receive and distribute product by truck, although some are serviced by rail, marine transport, or pipeline. Bulk plants may also store an inventory of petroleum products in consumer packaging, bulk containers, inside tanks and drums.