Bulk Liquid Stock Control at Retail Outlets

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FOREWORD

This recommended practice contains procedures and methods designed to control and identify product losses through use of a suitable inventory control accounting system. Employees should be trained in the procedures in this recommended practice and be required to follow them. Use of these procedures will enable the operator to identify trends and significant changes in inventory variations that may indicate the presence of controllable losses. Suitable corrective actions may then be taken to reduce product losses.

On September 23, 1988, the U.S. Environmental Protection Agency (EPA) issued its *Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST)*. These standards, which will be found in 40 *Code of Federal Regulations* Part 280, were published in Volume 53 of the *Federal Register* at pages 37194–37212. Furthermore, legislation and regulations on all aspects of UST management are under active development at state and local levels. These levels may have requirements other than those specified in the EPA *Technical Standards,* and the appropriate government agencies should be consulted about regulations that apply in the geographic area of interest before any action suggested by this recommended practice is taken. When used in this document, the term *implementing agency* means EPA or the designated state or local agency responsible for carrying out an approved UST program.

This recommended practice is based upon the experience of knowledgeable members of the petroleum industry. In some respects it may be more stringent than the requirements imposed by the EPA *Technical Standards*. However, the recommended practice does not attempt to cover all of the subjects covered by the EPA *Technical Standards*. Furthermore, while substantial effort has been made to ensure that none of the recommendations contravene the requirements of the EPA *Technical Standards,* API is not undertaking to interpret the EPA *Technical Standards* and cannot guarantee that its recommendations are completely in accord with them, nor is any representation made that these recommendations conform with any requirements imposed by state and local agencies.

This recommended practice supersedes and replaces API Recommended Practice 1621, fourth edition, December 1987. The EPA *Technical Standards* provide that Recommended Practice 1621 can be used as a guide to comply with EPA's standards for inventory control. According to EPA, an owner or operator conforms with this provision of the EPA *Technical Standards* if he or she uses the 1987 edition, which was in force when the EPA *Technical Standards* became final. However, an owner or operator who uses this new edition will also be meeting the requirements of the 1987 edition and EPA encourages the use of the most recent version.

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Suggested revisions are invited and should be submitted to the director of the Manufacturing, Distribution and Marketing Department, American Petroleum Institute, 200 Massachusetts Avenue, NW, Washington, DC 20001.

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SECTION 1—GENERAL

1.1 Introduction

1.1.1 The primary application of this recommended practice is in connection with the underground storage of motor fuels and used oil at retail and commercial facilities. This recommended practice does not apply to inground (that is, where a part of the tank is aboveground) or aboveground bulk storage systems. Hereafter, the use of the term *tank* refers to an underground petroleum storage tank. Any merchandising operation in which a commodity is handled in bulk is susceptible to stock or inventory losses. This problem becomes even more critical at retail outlets selling motor fuels since the principal bulk commodity handled is volatile. Thus, special care must be exercised to control product losses to (a) provide a safe environment for the operator, employees, customers, and neighbors; (b) minimize air and water pollution; and (c) maximize profits.

1.1.2 The negative effect of product losses on profits needs no explanation. However, the operator should understand that he or she, as well as the owner of the underground storage and dispensing equipment, may be subject to financial penalties imposed by government agencies if product leakage causes contamination. He or she may also be liable for personal injuries and property damage resulting from hazardous conditions caused by product leakage as a result of his or her negligence. Most states have regulations that contain penalties for noncompliance.

1.2 Purpose

The purpose of this recommended practice is to assist the operator in controlling bulk stock losses, thereby achieving a high level of safety and pollution control while maximizing profits. This recommended practice describes and explains practices and procedures needed to achieve good bulk stock control. This control is achieved through the daily preparation and review of inventory control records. Achieving good control of bulk stock allows the operator to quantify product losses and quickly recognize the presence of leaks or equipment problems.

1.3 Federal Requirements

The U.S. Environmental Protection Agency (EPA) accepts inventory control in conjunction with tank tightness testing as an approved method of release detection until December 22, 1998, or 10 years after a new tank has been installed or an existing tank has been upgraded, whichever comes later. The EPA requires that any suspected release be reported within 24 hours to the authority having jurisdiction. *Authority having jurisdiction* refers to one or more federal, state, or local government agencies or individuals responsible for approving equipment, installations, and procedures associated with underground storage tank systems. When using inventory control as a method of release detection, variances exceeding 1 percent of product throughput plus 130 gallons for two consecutive months must be reported to the authority having jurisdiction. In addition, the tank tightness test must be capable of detecting a 0.1 gallon per hour leak rate with a 95 percent probability of detection and a 5 percent probability of false alarm.

An alternate method of release detection accepted by the EPA is the use of an automatic tank gauging (ATG) system. The ATG must be capable of detecting a release equivalent to 0.2 gallons per hour with a 95 percent probability of detection and a 5 percent probability of false alarm during a monthly test. In addition to providing a tank testing feature, some ATG systems may be able to perform automatic inventory control. The scope of this recommended practice does not include additional discussion of ATG systems.

The EPA also allows manual tank gauging (MTG) as an alternate method of leak detection for tanks of 2000 gallons capacity or less (refer to 5.2). MTG can be used for tanks containing motor fuels, used oil, and petroleum distillates. However the EPA exempts certain tanks from the UST regulations, including heating oil tanks used for consumptive use on the premises where stored. Some state regulations, however, do not exempt such tanks.

State and local agencies may have more stringent standards and should be consulted.

1.4 Referenced Publications

The most recent editions of the following standards, codes, and specifications are cited in this recommended practice.

API

RP 1615	*Installation of Underground Petroleum Storage Systems*
RP 1628	*A Guide to the Assessment and Remediation of Underground Petroleum Releases*
RP 1631	*Interior Lining of Underground Storage Tanks*
RP 1637	*Using the API Color-Symbol System to Mark Equipment and Vehicles for Product Identifi-*