Recommended Practices for Installation of Aboveground Storage Systems for Motor-Vehicle Fueling

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FOREWORD

These *Recommended Practices for Installation of Aboveground Storage Systems for Motor-Vehicle Fueling* have been prepared as an industry service by the Petroleum Equipment Institute. The text represents the consensus views of the PEI Aboveground Tank Installation Committee, comprised of the following members:

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All questions and other communications relating to this document should be sent only to PEI Headquarters, addressed to the attention of the PEI Aboveground Tank Installation Committee.

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1. INTRODUCTION

1.1 Background. Historically, petroleum products at service stations and other motor-vehicle fueling sites have been stored in underground tanks. In response to environmental requirements and emerging technology, however, aboveground tanks at motor-vehicle fueling sites have become much more common.

1.2 Purpose. The purpose of this document is to provide a concise reference that describes recommended practices for the installation of aboveground storage systems at service stations, marinas, and other motor-vehicle fueling sites. The intent is to recommend practices that will minimize the possibility of aboveground storage system failure and reduce fire-safety and environmental hazards, while avoiding practices that will needlessly increase installation costs.

This document is not meant to serve as a basic instruction manual. Because storage system installation is a specialized craft, it is assumed that those using these recommended practices will have a fundamental comprehension of essential procedures for pipefitting, excavating, concrete placement, electrical installation, and related construction techniques.

1.3 Scope. These recommended practices apply to aboveground, stationary, shop-fabricated tanks and associated piping and equipment intended to dispense gasoline, diesel, and related petroleum products into motor vehicles at commercial and retail service stations and marinas. These recommended practices may be applied to horizontal and vertical tanks, single- and multi-walled tanks, as well as insulated, fire-resistant and protected tanks. Tanks covered in these recommended practices are intended for the storage of liquid motor fuels at or near atmospheric pressure. Product piping associated with these tanks may be aboveground, underground, or a combination of the two.

These recommended practices are not intended for storage system installations at bulk plants, terminals, industrial sites, aviation-fueling sites, isolated construction sites, and farms. Also not covered are skid tanks, oilfield-production tanks, field-fabricated storage tanks and storage systems for liquefied petroleum gases, liquefied natural gases, or compressed natural gases.

For purposes of this document, a tank that is in a vault in which backfill is placed around the tank to any extent is considered an underground tank. Refer to PEI/RP100 for recommended practices concerning underground storage system installation.

These practices relate directly to installation procedures and are not intended to fully address the design, operation, repair, or maintenance of aboveground storage tank systems.

This document is not meant to provide interpretation of regulatory or legislative requirements related to tank storage, nor does it endorse or recommend particular materials, equipment, suppliers, or manufacturers. The inclusion of procedures for the installation of equipment or devices is not meant to imply that such equipment or devices should always be used. Nothing in this document is intended to discourage the development and implementation of new methods and procedures.

1.4 Source. The practices outlined in this document represent a synthesis of recommendations published by various organizations, including the National Fire Protection Association (NFPA), International Code Council Inc. (ICC), American Petroleum Institute (API), Steel Tank Institute (STI), California Air Resources Board (CARB), U.S. Environmental Protection Agency (USEPA), Underwriters Laboratories Inc. (UL), and NACE International (NACE).

In addition, some installation specifications and procedures have been derived from manufacturers of tanks, piping, and related equipment. In instances where there were differences or omissions in material available from these sources, the Aboveground Tank Installation Committee of the Petroleum Equipment Institute has included consensus recommendations, based on the practical experience of committee members with these systems.

1.5 Use of PEI/RP100. Aboveground tank installations may require some underground construction. For example, to achieve code separation distances between the tank and dispenser, it may be necessary to install piping below ground. The user of this document should refer to PEI/RP100, *Recommended Practices for Installation of Underground Liquid Storage Systems,* for additional guidance in the installation of underground components of aboveground storage systems.

1.6 Importance of Competent Installers. The installation of liquid motor-fuel storage systems is a highly complex field and requires a wide range of construction knowledge and experience. In addition to proper design of an aboveground system, reliance on tank installers who possess both the experience and integrity to insist on doing the job right constitutes the greatest protection against ultimate tank-system failure and liability exposure.