

Management of Hazards Associated with Location of Process Plant Portable Buildings

API RECOMMENDED PRACTICE 753
FIRST EDITION, JUNE 2007

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Downstream Segment

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FOREWORD

The purpose of this recommended practice (RP) is to provide guidance for reducing the risk to personnel located in portable buildings from potential explosion, fire and toxic release hazards. The document is based on the following guiding principles, (1) locate personnel away from covered process areas consistent with safe and effective operations, (2) minimize the use of occupied portable buildings near covered process areas, (3) manage the occupancy of portable buildings, especially during periods of increased risk including unit start-up or planned shut-down operations, (4) design, construct, install, and maintain occupied portable buildings to protect occupants against potential hazards, and (5) manage the use of portable buildings as an integral part of the design, construction, maintenance, and operation of a facility. The recommended practice is organized into five sections with two appendices which provide the user with additional technical background and guidance.

Section 1 defines the purpose and scope of the document. Section 1 also provides the guiding principles for the development of this document and direction regarding implementation and change control.

Section 2 addresses management of personnel in portable buildings. The topics include identification of essential personnel and their use of portable buildings. Further, Section 2 addresses personnel that are not essential and makes recommendations regarding their location relative to covered process areas, including during times of non-routine operations. Section 2 also discusses portable buildings used for various purposes and identifies those that require evaluation for siting relative to covered process areas. This includes criteria such as occupancy and purpose of the portable building.

Sections 3, 4 and 5 address explosion, fire, and toxic release hazards respectively. This document is based on a philosophy that portable buildings are primarily sited (located) in relation to explosion hazards in the area as described in Section 3. Risks associated with fire and toxic release hazards are managed as described in Sections 4 and 5.

The Appendices include two parts. Appendix A describes the technical bases of certain key topics or criteria provided in this document. Appendix B provides guidance on determining congested volumes used in vapor cloud explosion calculations along with examples to demonstrate that guidance.

As used in this document, “shall” denotes a minimum requirement in order to conform to the recommended practice. “Should” denotes a recommendation, or that, which is advised but not required in order to conform to the recommended practice.

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Suggested revisions are invited and should be submitted to the Standards and Publications Department, API, 200 Massachusetts Avenue, NW, Suite 1100, Washington, DC 20001, standards@api.org.

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Management of Hazards Associated with Location of Process Plant Portable Buildings

1 General

1.1 INTRODUCTION

Occupied permanent buildings (e. g., control rooms, operator shelters) located near covered process areas are typically constructed to be blast and fire resistant. In contrast, conventional portable buildings (i.e., light wood trailers) are typically not constructed to be blast and fire resistant. Past explosion accidents have demonstrated that occupants of conventional portable buildings are susceptible to injuries from structural failures, building collapse, and building debris and projectiles.

1.2 PURPOSE

The purpose of this recommended practice is to provide guidance for reducing the risk to personnel located in portable buildings from potential explosion, fire and toxic release hazards.

1.3 GUIDING PRINCIPLES

This recommended practice is based on the following guiding principles:

- Locate personnel away from covered process areas consistent with safe and effective operations
- Minimize the use of occupied portable buildings in close proximity to covered process areas
- Manage the occupancy of portable buildings, especially during periods of increased risk including unit start-up or planned shut-down operations
- Design, construct, install, and maintain occupied portable buildings to protect occupants against potential hazards
- Manage the use of portable buildings as an integral part of the design, construction, maintenance, and operation of a facility

1.4 SCOPE

This recommended practice was developed for refineries, petrochemical and chemical operations, natural gas liquids extraction plants, and other facilities such as those covered by the OSHA Process Safety Management Standard, 29 *CFR* 1910.119.

1.5 IMPLEMENTATION AND CHANGE CONTROL

This recommended practice provides information that can be used when establishing or updating policies or procedures concerning the placement of portable buildings. Specific portable building siting guidelines and procedures for managing change shall be developed for the use and location of portable buildings. Examples of changes that should be managed include:

- Reassigning personnel
- Changing process conditions
- Adding a building
- Modifying a building
- Reclassifying a building function (e. g., temporary to permanent)
- Relocating a building
- Introducing new hazards affecting a building

Formal written approval by senior management should be required for deviations from established company policies or procedures.

1.6 RELATIONSHIP TO API RP 752

This document supersedes API Recommended Practice 752 with regard to portable buildings.

1.7 DEFINITIONS

For the purpose of this recommended practice, the following definitions apply: