



CGA P-51—2021 STANDARD FOR TRANSPORTATION SECURITY IN THE COMPRESSED GAS INDUSTRY

FOURTH EDITION

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NOTE—Technical changes from the previous edition are underlined.

NOTE—Appendix A (Informative) is for information only.

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1 Introduction

Security measures improve the safe transportation of hazardous materials by reducing the risks from a wide range of threats. Concerns about terrorism, sabotage, theft, or intentional product contamination give companies that transport hazardous materials a compelling reason to implement security measures for transportation of their products. Security measures, like safety measures, protect the general public and the environment, as well as the compressed gas industry and its employees.

2 Scope

This publication is intended for management personnel, transportation specialists, and all other personnel that are responsible for the safe and secure transportation of raw materials and products by highway, rail, air, and pipeline. It contains tools and resources that are useful when assessing security issues related to the transportation of hazardous materials. It provides guidance for compliance with Title 49 of the U.S. *Code of Federal Regulations* (49 CFR) Part 172.800 (HM-232), *Security Requirements for Offerors and Transporters of Hazardous Materials*, and 49 CFR Part 385 Subpart E, *Hazardous Materials Safety Permits* [1].¹

The implementation of the information in this publication will vary according to the compressed gas being transported and the mode and route of transportation. Companies should coordinate and communicate their security procedures with employees, carriers, customers, and all others involved in the safe and secure transportation of hazardous products.

3 Definitions

For the purpose of this publication, the following definitions apply.

3.1 Publication terminology

3.1.1 Shall

Indicates that the procedure is mandatory. It is used wherever the criterion for conformance to specific recommendations allows no deviation.

3.1.2 Should

Indicates that a procedure is recommended.

3.1.3 May

Indicates that the procedure is optional.

3.1.4 Will

Is used only to indicate the future, not a degree of requirement.

3.1.5 Can

Indicates a possibility or ability.

3.2 Technical definitions

3.2.1 Bulk

Container having a water capacity greater than 1000 lb (454 kg).

NOTE—Includes tube trailers, cargo tanks, ISO containers, etc.

3.2.2 Consequence

Amount of loss or damage expected from a successful attack against an asset.

NOTE—Loss may be monetary but may also include political, morale, operational effectiveness, or other impacts. The impact of security events that should be considered only includes those that are extremely severe. Examples of relevant consequences considered in a security vulnerability analysis include injury or death; large-scale disruption to public, private,

¹ References are shown by bracketed numbers and are listed in order of appearance in the reference section.

or company operations; large-scale environmental damage; large-scale financial loss; loss of critical data; and loss of reputation.

3.2.3 Countermeasure

Action taken or physical capability provided to reduce or eliminate one or more vulnerabilities.

3.2.4 High risk security chemicals (HRSC)

Chemical that is a likely target for terrorist or criminal activity.

NOTE—Formerly referred to as chemical of concern (COC)/chemical of interest (COI).

NOTE—The chemical can be one that is regulated or one that is of concern to the compressed gas industry, such as nitrous oxide.

3.2.5 Risk

Potential for damage to or loss of an asset.

NOTE—Risk in the context of chemical process security is the potential for a catastrophic outcome to be realized. Examples of the catastrophic outcomes of interest include an intentional release of hazardous materials to the atmosphere, theft of chemicals that could later be used as weapons or for other criminal activities, the contamination of chemicals that could later harm the public, or the economic costs of the damage or disruption of a chemical process.

3.2.6 Security risk assessment

Process of predicting the likelihood of an adversary successfully exploiting vulnerability and the resulting degree of consequences on an asset.

NOTE—A security risk assessment provides the basis for rank ordering of risks and thus establishes priorities for the application of countermeasures.

3.2.7 Risk management plan (RMP)

United States Environmental Protection Agency (EPA) regulatory program that requires analysis of release scenarios and implementation of extensive safety analysis, and documentation for each process containing a regulated chemical that exceeds certain threshold amounts.

NOTE—Information on the EPA's Risk Management Plan (RMP) is found in Title 40 of the U.S. *Code of Federal Regulations* (40 CFR) Part 68, Subpart G [2].

3.2.8 Seal

Device used as tamperproof identification or securement device.

NOTE—ISO/PAS 17712, *Freight containers—Mechanical seals* is a standard that describes security seals used in international shipments [3]. Some states have identified specific product security seal requirements.

3.2.9 Security plan—U.S. DOT requirement

Document that describes a plan to address security issues and related events including security assessment and mitigation options, see 49 CFR 172.800 [1].

3.2.10 Terrorism

Unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof in furtherance of political or social objectives.

3.2.11 Threat

Indication, circumstance, or event that can cause the loss of or damage to hazardous materials that are in transit.

3.2.12 Vulnerability

Weakness that can be exploited by an adversary to gain access to hazardous materials in transit.

NOTE—Vulnerabilities can include but are not limited to equipment, personnel practices and behaviors, locations of people, equipment, buildings, or operational practices.