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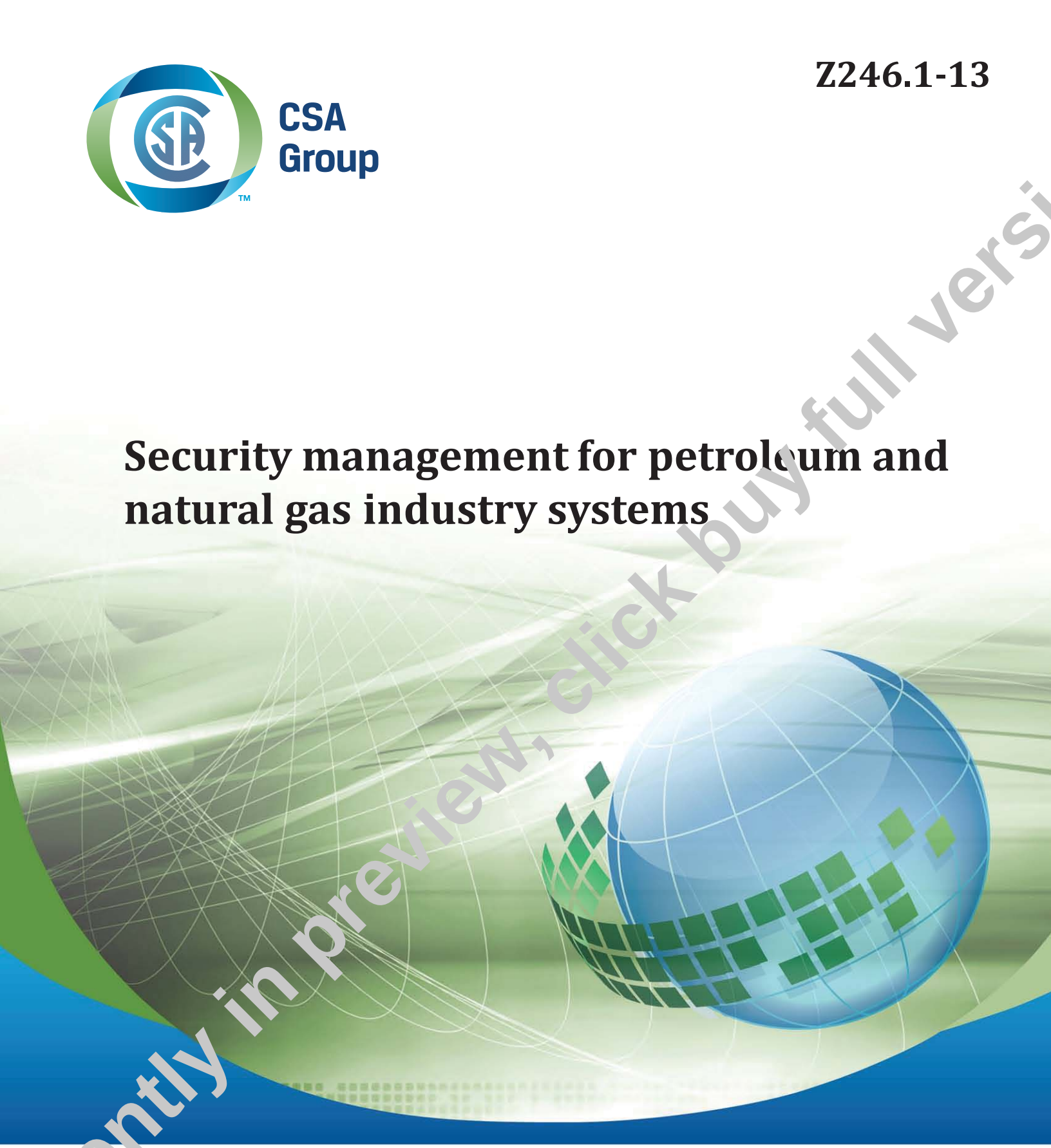
Z246.1-13

Security management for petroleum and natural gas industry systems



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Preface

This is the second edition of CSA Z246.1, *Security management for petroleum and natural gas industry systems*. It supersedes the previous edition published in 2009.

This Standard uses the concept of a security management program, and in particular risk management, to address security issues. This Standard provides a performance-based approach for use by the operator to establish governance, conduct planning, implement and improve security operations (including detection and mitigation practices), and refine the security management program through change management and audit processes. This approach allows users to apply this Standard across the petroleum and natural gas industry.

This Standard is one of several security risk management tools. Operators should work with other industries, as well as governmental agencies, in order to effectively manage the security of their energy infrastructure. A security management program should complement existing programs and should consider the risks and criticality of the assets being protected. Therefore, this Standard should be read in conjunction with other security legislation, safety legislation, best practices, policies, standards, and applicable codes (e.g., CSA Z662, CAN/CSA-ISO 31000, and CSA Z1600).

This Standard was prepared by the Technical Committee on Security Management for Petroleum and Natural Gas Industry Systems, under the jurisdiction of the Strategic Steering Committee on Petroleum and Natural Gas Industry Systems, and has been formally approved by the Technical Committee.

Notes:

1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*

2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*

3) *This Standard was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.*

4) *To submit a request for interpretation of this Standard, please send the following information to* ***inquiries@csagroup.org*** *and include "Request for interpretation" in the subject line:*

a) *define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;*

b) *provide an explanation of circumstances surrounding the actual field condition; and*

c) *where possible, phrase the request in such a way that a specific "yes" or "no" answer will address the issue.*

Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are available on the Current Standards Activities page at standardsactivities.csa.ca.

5) *This Standard is subject to periodic review, and suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to* ***inquiries@csagroup.org*** *and include "Proposal for change" in the subject line:*

a) *Standard designation (number);*

b) *Relevant clause, table, and/or figure number;*

c) *Wording of the proposed change; and*

d) *Rationale for the change.*

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0 Introduction

Canadians recognize the importance of a safe, secure, and reliable energy supply and that any prolonged interruption in the supply of energy, such as petroleum or natural gas, would adversely impact the economy. Because energy infrastructure assets and systems are geographically dispersed and the operation of the infrastructure is typically managed by several different operating companies using a variety of delivery mechanisms, protecting the energy supply presents a unique challenge. In order to help petroleum and natural gas companies evaluate and respond appropriately to security threats, CSA Group has worked with security professionals to prepare this Standard.

This Standard is based on the premise that security risks should be managed using risk-based and performance-based management processes. The foundation of a security management program is the identification and analysis of security risks on a continuing basis and the mitigation of these risks with adequate security measures. The security risk management process can be used to help accomplish this task and to help the operator make decisions regarding the need for security measures. Potential threats and appropriate security measures vary based on size, location, facility type, and existing security measures. This Standard provides a means of identifying, analyzing, and reducing risks through a security risk management process. This Standard also identifies specific security risk reduction measures to be implemented. A risk-based approach recognizes that there is no uniform security management program that would apply to the entire petroleum and natural gas industry and that resources are best applied to mitigate high-risk situations. Not all security risks can be completely prevented.

A governance framework for a security management program begins with an awareness of what the program serves to protect. Effective governance ensures the protection of the key program components: people, the environment, assets, and economic stability.

An effective security management program (as illustrated in Figure 1) requires sustainable governance in the form of

a) legislative and policy framework (policies, process, standards, and directives);
b) organizational and strategic leadership (knowledge, training, and awareness);
c) accountability (both internal and external); and
d) compliance (auditing, monitoring, and evaluating).

Figure 1
Monitoring and review
(See Clause 11.)

1 Scope

1.1

This Standard specifies criteria for establishing a security management program for petroleum and natural gas industry systems to ensure security threats and associated risks are identified and managed. This Standard provides mitigation and response processes and procedures to prevent and minimize the impact of security incidents that could adversely affect people, the environment, assets, and economic stability.

1.2

This Standard applies to all petroleum and natural gas industry systems (as illustrated in Figures 2 and 3), including

a) pipeline systems handling
   i) oil;
   ii) gas;
   iii) oil-field water;