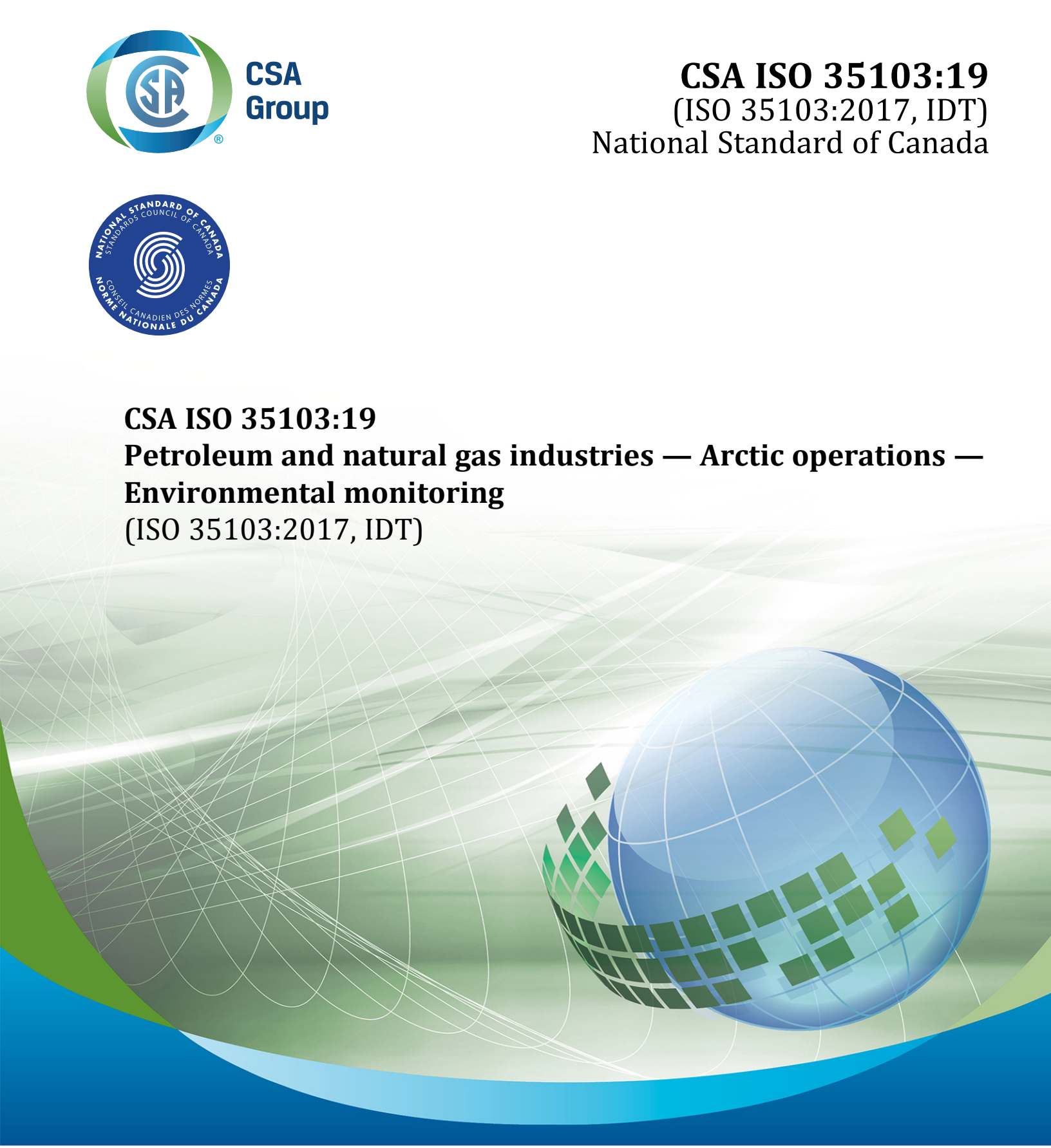
CSA Group

CSA ISO 35103:19
(ISO 35103:2017, IDT)
National Standard of Canada

CSA ISO 35103:19
Petroleum and natural gas industries — Arctic operations — Environmental monitoring
(ISO 35103:2017, IDT)



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Standards Council of Canada
600-55 Metcalfe Street
Ottawa, Ontario, K1P 6L5
Canada

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Petroleum and natural gas industries — Arctic operations — Environmental monitoring

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CSA Preface

This is the first edition of CSA ISO 35103, *Petroleum and natural gas industries — Arctic operations — Environmental monitoring*, which is an adoption without modification of the identically titled ISO (International Organization for Standardization) Standard 35103 (first edition, 2017-12).

For brevity, this Standard will be referred to as "CSA ISO 35103" throughout.

Standards development within the Canadian Arctic operations sector is harmonized with international standards development.

This Standard was reviewed for Canadian adoption by the harmonized Canadian Advisory Committee and CSA Technical Committee to ISO TC 67/SC 8, Arctic Operations. This Standard has been formally approved by the CSA Technical Committee on Arctic Operations, under the jurisdiction of the CSA Strategic Steering Committee on Natural Resources.

This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

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K. Clogg-Wright	CSA Group, Calgary, Alberta, Canada	*Project Manager*
P. Steenhof	CSA Group, Ottawa, Ontario, Canada	*Project Manager*

CSA Working Group on Working Environment

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J. Power	National Research Council Canada, Research Council Officer (OCRE), St. John's, Newfoundland and Labrador, Canada	

INTERNATIONAL STANDARD

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First edition
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Petroleum and natural gas industries — Arctic operations — Environmental monitoring

Industries du pétrole et du gaz naturel — Opérations en Arctique - Surveillance de l'environnement

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
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Contents

Page

Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC 8, *Arctic operations*.

Introduction

General

This document has been developed in order to promote internationally agreed approaches to environmental monitoring of oil and gas operations in Arctic offshore environments. The monitoring of onshore environments is not included in this document, except where relevant to an offshore development.

Environmental monitoring

Environmental monitoring includes:

a) monitoring of environmental aspects for normal, abnormal and emergency conditions:

   The environmental aspects of an organization under all conditions are determined by its environmental management system (EMS) procedures and can include:

   1) emissions to air;

   2) releases to water;

   3) releases to land;

   4) use of raw materials and natural resources, including physical presence of facilities;

   5) use of energy;

   6) energy emitted, including heat, radiation, vibration, noise and light;

   7) generation of waste and/or by-products;

   8) environmental aspects with beneficial impact;

b) monitoring of environmental impacts:

   Environmental impacts can occur at local, regional and global scales, while they can also be direct, indirect or cumulative.

The relationship between environmental aspects and environmental impacts is one of cause and effect.

Within the scope of this document, the environment includes all relevant physical, chemical and biological components of the sea, atmosphere and land, where the latter is potentially impacted by an offshore development. When an organization determines the scope of its environmental impact, the need to protect the following attributes is considered:

— human beings and cultural heritage;

— fauna and flora;

— soil, water, air and climate;

— material assets (such as existing pipelines and cables, shipping routes, seabed resources and resource extraction facilities).

There are no existing internationally agreed standards for environmental monitoring; neither are there such standards for marine environmental monitoring although there is a considerable body of guidance documents.

This document presents sufficient information to guide organizations towards relevant monitoring methods for use in the Arctic.

The special conditions of the Arctic will require organizations to modify their monitoring methods to suit the conditions encountered.

General marine monitoring methods can be adapted by the oil and gas sector to meet the needs of its Arctic maritime locations, its development phases, facility types and operations, their environmental aspects and their impacts upon the marine environment.

Relationship of this document to ISO 14001, ISO 9001 and other standards

The organizations that have implemented ISO 14001 or ISO 9001 already apply the elements of monitoring, measurement, analysis and improvement to their (environmental) monitoring processes.

Additional standards that apply to environmental monitoring include laboratory standards, specific guides on sediment, water and air quality monitoring, and recommended practices for species identification; the use of agreed statistical methods is essential.

Petroleum and natural gas industries — Arctic operations — Environmental monitoring

1 Scope

This document gives requirements, specifications and guidelines to ensure that environmental monitoring in the offshore Arctic region is fit for purpose. The Arctic region includes the territory lying to the North of the Arctic Circle (Latitude 66°33′45.8″). This document can be applied to sub-Arctic locations which experience Arctic-like conditions and contain relevant components of a cold-climate ecosystem.

This document is applicable to all Arctic oil and gas operations from licence block acquisition through exploration, engineering design, construction, commissioning, operation, decommissioning and restoration. It covers the offshore or maritime environment, including for the purposes of this document, the fully marine and estuarine waters of the Arctic, whether frozen or ice-free. The environment includes all relevant physical, chemical and biological components. Monitoring methods for onshore (terrestrial) environments are not covered in this document, although onshore environments are included where monitoring is required at onshore locations in relation to an offshore development.

This document covers both monitoring of environmental aspects for normal, abnormal and emergency conditions, and monitoring of environmental impacts. It includes monitoring in near-field, far-field, transboundary and regional scales, but does not include global environmental monitoring.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*

ISO/TS 20281, *Water quality — Guidance on statistical interpretation of ecotoxicity data*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1 Risk

3.1.1
accident
unplanned event that resulted in injury or ill health of people, or damage or loss to property, plant, materials or the environment or a loss of business opportunity