SLOVENSKI STANDARD
SIST EN ISO 35104:2020

01-december-2020

Industrija za predelavo nafte in zemeljskega plina - Obratovanje v arktičnem okolju - Upravljanje z ledom (ISO 35104:2018)

Petroleum and natural gas industries - Arctic operations - Ice management (ISO 35104:2018)

Erdöl- und Erdgasindustrie - Arktisbetrieb - Eismanagement (ISO 35104:2018)

Industries du pétrole et du gaz naturel - Opérations en Arctique - Gestion des glaces (ISO 35104:2018)

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ICS:

75.020	Pridobivanje in predelava nafte in zemeljskega plina	Extraction and processing of petroleum and natural gas

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Petroleum and natural gas industries - Arctic operations - Ice management (ISO 35104:2018)

Industries du pétrole et du gaz naturel - Opérations en Arctique - Gestion des glaces (ISO 35104:2018)

Erdöl- und Erdgasindustrie - Arktisbetrieb - Eismanagement (ISO 35104:2018)

This European Standard was approved by CEN on 4 October 2020.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

The text of ISO 35104:2018 has been prepared by Technical Committee ISO/TC 67 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 35104:2020 by Technical Committee CEN/TC 12 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2021, and conflicting national standards shall be withdrawn at the latest by April 2021.

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Endorsement notice

The text of ISO 35104:2018 has been approved by CEN as EN ISO 35104:2020 without any modification.

INTERNATIONAL STANDARD

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Petroleum and natural gas industries — Arctic operations — Ice management

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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).

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For an explanation of 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 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*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document specifies requirements and recommendations applicable to ice management for oil and gas operations in arctic and cold regions.

Ice management (IM) is defined as the sum of all activities, carried out with the objective to mitigate hazardous situations by reducing or avoiding actions from any kind of ice (sea ice or glacial ice), and includes:

— establishment of an understanding of the ice regime and potential ice hazards prior to the initiation of operations;

— operational surveillance, including detection, tracking and forecasting;

— identification and evaluation of any physical threat to the operation;

— a working ice alert system and associated procedures;

— physical ice management by the supporting IM vessels, including ice breaking and/or iceberg management;

— procedures associated with the safe avoidance of potentially hazardous ice;

— documentation of IM performance and revision of the IM system to ensure continuous improvement;

— relevant procedures associated with the safe shut-down of floating structures (moored or DP), both active (move off and ice management) or semi passive (ice management, but no move off);

— relevant procedures associated with the safe shut-down of bottom-founded structures, both active (with ice management and move-off capability), or passive (fixed with ice management).

This document describes performance requirements and recommendations to ensure timely identification of ice hazards, their mitigation through ice management, and securement of the facility if necessary.

This document is intended to ensure that ice management operations are planned, engineered, integrated and implemented whenever needed. Performance requirements of an ice management system can depend on the type of facility and the operations undertaken on the facility. Particular emphasis is placed on ensuring adequate performance in circumstances where there is little prior experience with a particular facility or in a particular geographical region.

This document consists of a normative part and an informative part. The normative part considers the overall operations, hazards and possible counter measures, systems and procedures.

Annex A contains a HAZID workbook, which is to be used in conjunction with the relevant clauses when preparing an ice management plan.

Annex B provides informative data, which supplements the normative part and is to be read in conjunction with the main body of the document.

There are other International Standards which are also relevant to ice management, such as ISO 35101 for working environments and ISO 35106 for arctic and cold regions data requirements (for design and operation). In addition, ISO 19900 specifies general principles for the design and assessment of offshore structures subjected to known or foreseeable types of actions, applicable worldwide to all types of offshore structures, including bottom-founded structures as well as floating structures, and ISO 19906 specifies requirements and provides recommendations and guidance for the design, construction, transportation, installation and removal of offshore structures, related to the activities of the petroleum and natural gas industries in arctic and cold regions.

Petroleum and natural gas industries — Arctic operations — Ice management

1 Scope

This document establishes the principles, specifies the requirements and provides guidance for ice management (IM) in arctic and cold regions, from the point of view of planning, engineering, implementation and documentation. Reference to arctic and cold regions in this document is deemed to include both the Arctic and other regions characterized by low ambient temperatures, sea ice, icebergs and icing conditions. These regions are often remote and lacking in marine and communications infrastructure.

Ice management to support the following in-ice activities and infrastructures are covered by this document:

— floating moored and/or dynamically positioned drilling vessels, coring vessels, production facilities and work-over vessels;

— construction and installation (includes trenching, dredging, pipe laying);

— tanker loading and other offloading operations;

— protecting subsea structures and equipment;

— seismic operations;

— oil spill response;

— bottom founded structures (fixed platforms and movable structures, including jack-ups).

This document also applies to mobilization, demobilization and construction support services, because these can be affected by ice conditions.

In view of the wide range of possible offshore operations in arctic and cold regions, this document provides guidelines, but does not present typical ice management plans for field operations.

This document does not provide requirements, recommendations or guidance pertaining to the design of structures, systems and components used in ice management, beyond the principles given. This document does not provide specific formulations for ice loads, which are covered by ISO 19906.

This document is not applicable to coastal port operations and to commercial trading vessels conducting transit or convoy operations.

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 19901-1, *Petroleum and natural gas industries — Specific requirements for offshore structures — Part 1: Metocean design and operating considerations*

ISO 19901-6, *Petroleum and natural gas industries — Specific requirements for offshore structures — Part 6: Marine operations*

ISO 35106, *Petroleum and natural gas industries — Arctic operations — Metocean, ice, and seabed data*