BSI Standards Publication

Petroleum and natural gas industries — Site-specific assessment of mobile offshore units

Part 3: Floating unit

bsi.

National foreword

This British Standard is the UK implementation of EN ISO 19905-3:2019. It is identical to ISO 19905-3:2017. It supersedes BS ISO 19905-3:2017, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PSE/17, Materials and equipment for petroleum, petrochemical and natural gas industries.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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31 October 2019	This corrigendum renumbers BS ISO 19905-3:2017 as BS EN ISO 19905-3:2019

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English Version

Petroleum and natural gas industries - Site-specific assessment of mobile offshore units - Part 3: Floating unit (ISO 19905-3:2017)

Industries du pétrole et du gaz naturel - Évaluation spécifique au site d'unités mobiles en mer - Partie 3: Unité flottante (ISO 19905-3:2017)

Erdöl- und Erdgasindustrie - Beurteilung von mobilen Offshore Einheiten bezüglich ihres Einsatzgebietes - Teil 3: Schwimmende Einheiten (ISO 19905-3:2017)

This European Standard was approved by CEN on 9 September 2019.

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European foreword

The text of ISO 19905-3:2017 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 19905-3:2019 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of an identical text or by endorsement, at the latest by April 2020, and conflicting national standards shall be withdrawn at the latest by April 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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Endorsement notice

The text of ISO 19905-3:2017 has been approved by CEN as EN ISO 19905-3:2019 without any modification.

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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 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 7, *Offshore structures*.

A list of all parts in the ISO 19905 series can be found on the ISO website.

Introduction

The series of International Standards applicable to types of offshore structure, ISO 19900 to ISO 19906, addresses design requirements and assessments for all offshore structures used by the petroleum and natural gas industries worldwide. Through their application, the intention is to achieve reliability levels appropriate for manned and unmanned offshore structures, whatever the type of structure and the nature or combination of the materials used.

It is important to recognize that structural integrity is an overall concept comprising models for describing actions, structural analyses, design or assessment rules, safety elements, workmanship, quality control procedures and national requirements, all of which are mutually dependent. The modification of one aspect of the design or assessment in isolation can disturb the balance of reliability inherent in the overall concept or structural system. The implications involved in modifications, therefore, need to be considered in relation to the overall reliability of offshore structural systems.

The series of International Standards applicable to the various types of offshore structure is intended to provide a wide latitude in the choice of structural configurations, materials and techniques without hindering innovation. Sound engineering judgement is therefore necessary in the use of these International Standards.

This document states the general principles and basic requirements for the site-specific assessment of mobile floating units. The technical information used in the assessment primarily resides in documents referenced herein. This document is intended to be used for assessment and not for design.

Site-specific assessment is normally carried out when an existing mobile floating unit is to be installed at a specific site. The assessment is not intended to provide a full evaluation of the unit; it is assumed that aspects not addressed herein have been addressed at the design stage using other practices and standards.

The purpose of the site-specific assessment is to demonstrate the adequacy of the mobile floating unit, its stationkeeping system and any connected systems for the applicable assessment situations and defined limit states, taking into account the consequences of failure. The results of a site-specific assessment should be appropriately recorded and communicated to those persons required to know or act on the conclusions and recommendations. Alternative approaches to the site-specific assessment can be used provided that they have been shown to give a level of reliability equivalent, or superior, to that implicit in this document.

In International Standards, the following verbal forms are used:

— “shall” and “shall not” are used to indicate requirements strictly to be followed in order to conform to the document and from which no deviation is permitted;

— “should” and “should not” are used to indicate that, among several possibilities, one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required, or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited;

— “may” is used to indicate a course of action permissible within the limits of the document;

— “can” and “cannot” are used for statements of possibility and capability, whether material, physical or causal.

INTERNATIONAL STANDARD ISO 19905-3:2017(E)

Petroleum and natural gas industries — Site-specific assessment of mobile offshore units —

Part 3: Floating unit

1 Scope

This document specifies requirements and gives guidance for the site-specific assessment of mobile floating units for use in the petroleum and natural gas industries. It addresses the installed phase, at a specific site, of manned non-evacuated, manned evacuated and unmanned mobile floating units.

This document addresses mobile floating units that are monohull (e.g. ship-shaped vessels or barges); column-stabilized, commonly referred to as semi-submersibles; or other hull forms (e.g. cylindrical/conical shaped). It is not applicable to tension leg platforms. Stationkeeping can be provided by a mooring system, a thruster assisted mooring system, or dynamic positioning. The function of the unit can be broad, including drilling, floatel, tender assist, etc. In situations where hydrocarbons are being produced, there can be additional requirements.

The requirements of this document apply to the hull and stationkeeping system for all types of mobile units. The activity specific operating guideline document requirements can be modified to be appropriate to the situation being assessed.

This document does not address all site considerations, and certain specific locations can require additional assessment.

This document is applicable only to mobile floating units that are structurally sound and adequately maintained, which is normally demonstrated through holding a valid RCS classification certificate.

This document does not address design, transportation to and from site, or installation and removal from site.

This document sets out the requirements for site-specific assessments, but generally relies on other documents to supply the details of how the assessments are to be undertaken. In general:

— ISO 19901-7 is referenced for the assessment of the stationkeeping system;

— ISO 19904-1 is referenced to determine the metocean actions on the unit;

— ISO 19906 is referenced for arctic and cold regions;

— the hull structure and airgap are assessed by use of a comparison between the site-specific metocean conditions and its design conditions, as set out in the RCS approved operations manual;

— ISO 13624-1 and ISO/TR 13624-2[1] are referenced for the assessment of the marine drilling riser of mobile floating drilling units. Equivalent alternative methodologies can be used;

— IMCA M 220[5] is referenced for developing an activity specific operating guidelines. Agreed alternative methodologies can be used.

NOTE 1 The scope of ISO 19904-1 specifically states that its requirements do not apply to mobile units, but the methodologies given for assessing metocean actions can be used.

NOTE 2 RCS rules and the IMO MODU code[4] provide guidance for design and general operation of mobile floating units.