NORSOK Standard

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Well intervention equipment

Brønnintervensjonsutstyr

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Foreword

NORSOK D-002:2020 was adopted as NORSOK Standard 2020-01-13.

NORSOK D-002:2020 supersedes NORSOK D-002 Rev. 2, June 2013.

NORSOK is an acronym for the competitive position of the Norwegian continental shelf and comprise petroleum industry standards in Norway. The collaboration initiative in 1993 between the authorities and the petroleum industry initiated the development of NORSOK standards.

Reducing the project execution time and developing and operating cost for petroleum installations on the Norwegian shelf was the target.

The intention for the Petroleum industry is to develop and use standards providing good technical and cost-effective solutions to ensure that the petroleum resources are exploited and managed in the best possible way by the industry and the authorities. The industry will actively contribute to the development and use of international standards in the global market.

The NORSOK standards shall:

— bridge the gap based on experiences from the Norwegian continental shelf where the international standards are unsatisfactory

— replace oil company internal specifications where possible

— be available as references for the authorities' regulations

— be cost-effective

— promote the Norwegian sector as an attractive area for investments and activities

Developing new NORSOK standards and regular maintenance of existing standards shall contribute to maintain the competitiveness both nationally and internationally for the Norwegian petroleum industry.

The NORSOK standards are developed by experts from the Norwegian petroleum industry and approved according to the consensus principles as laid down by the guidelines given in NORSOK A-001 directive.

The NORSOK standards are owned by the Norwegian Oil and Gas Association, the Federation of Norwegian Industries and the Norwegian Shipowners' Association. They are managed and published by Standards Norway.

The following main changes are implemented in this revision:

— this document provides design requirements for well intervention surface equipment

— the work string definition is updated to include hose, rope and composite rod

— the requirement for design of the control cabins to be permanently manned, is removed

— requirements for wellhead pump have been added

— the quality check of coiled tubing work string validity has been changed from 6 to 12 months if stored under proper conditions

— the minimum bending radius of the coiled tubing has been changed from 48 to 40 times the OD

— requirements for grease injection capacity is updated both for grease injection head and BOP

— added new chapter, work string technologies

Introduction

This document is published as a supplement to other relevant current regulations and standards in order to state relevant governing requirements, recommendations and permissions relevant to equipment used in well intervention operations within Norwegian jurisdiction.

The target group of this document are all involved in well intervention operations under regulation by Petroleum Safety Authority Norway. The reader of this document will get an understanding of the requirements for well intervention equipment, however references to other standards and regulations are given to fulfil the complete understanding.

This document refers to relevant regulations, standards and other governing documents whenever possible and states supplemental definitions, requirements, recommendations and permissions whenever deemed necessary.

The bibliography lists standards, norms, laws, regulations and other literature that may be relevant to the use of this document.

Normative text contains the requirements of the standard. Informative text is only guidance to the reader. All text in foreword, introduction and notes is informative text. Note to entries in clause 3 and annexes to the document may be either normative or informative.

Well intervention equipment

1 Scope

This document provides design requirements for well intervention surface equipment common across all exploration and production companies and service companies operating on the Norwegian Continental Shelf.

The standard defines what is considered typical and ordinary well intervention equipment. New equipment, special operations and operations in certain environments may require additional requirements and specifications. These specific additions are excluded from the standard and should be addressed in the risk assessment of the specific job. The general requirements in clauses 5 and 6 of this standard also apply to well intervention equipment falling outside traditional snubbing, coiled tubing and wireline.

2 Normative references

The following referenced documents contain text which fully or in part is part of the requirements in the document. For dated references, only the edition cited applies. For undated references, the latest edition of the cited document applies (including amendments).

All informative references are listed in clause "Bibliography".

NORSOK D-001, *Drilling facilities*

NORSOK D-010, *Well integrity in drilling and well operations*

NORSOK N-001, *Integrity of offshore structures*

NORSOK S-001, *Technical safety*

NORSOK S-002, *Working environment*

NORSOK R-002, *Lifting equipment*

NORSOK R-003, *Safe use of lifting equipment*

NORSOK Z-015, *Temporary equipment*

ISO 9001, *Quality management systems – Requirements*

ISO 10423, *Petroleum and natural gas industries – Drilling and production equipment – Wellhead and Christmas tree equipment (API Spec 6A)*

ISO 13533, *Petroleum and natural gas industries – Drilling and production equipment – Drill-through equipment (API Spec 16A)*

ISO 13628-7, *Petroleum and natural gas industries – Design and operation of subsea production systems – Part 7: Completion/workover riser systems*

ISO 15156-1, *Petroleum and natural gas industries – Materials for use in H2S-containing environments in oil and gas production – Part 1: General principles for selection of cracking-resistant materials (NACE MR0175)*

API Spec 5ST, *Specification for Coiled Tubing*

API Spec 16D, *Specification for Control Systems for Drilling Well Control Equipment and Control Systems for Diverter Equipment Second Edition*

API RP 16ST, *Coiled Tubing Well Control Equipment Systems*

DNVGL-OS-E-101, *Drilling Plant*

Dropped Objects Safety, *Best Practice Dropped Object Prevention Manual*

The Norwegian Oil and Gas Association 070, *Application of IEC 61508 and IEC 61511 in the Norwegian petroleum industry*

The Norwegian Oil and Gas Association 081, *Norwegian oil and g s recommended guidelines for remote pipe handling operations*