

NORSOK D-010 REVISION

D-010 Well integrity in drilling and well operations

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Presentation overview

- Organisation of standards revision work
- The four NORSOK Drilling standards
- D-010 revision 5 project
 - Overview
 - Milestones
 - Major changes
- Challenges

Organization of drilling standardisation work

NORSOK Owners

Federation of Norwegian Industries, Norwegian Shipowners Association, Norwegian Oil and Gas Association

Sector Board Petroleum Industry

Tri-partite executive committee,
responsible for the standardization work

Standard Norway

Contracted by the NORSOK owners to administer
the portfolio of 68 standards

NORSOK Expert Group – Drilling

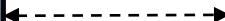
Responsible for the content of the four
standards within drilling

Drilling Managers Forum

Norsk Olje & Gass, Operators forum

D-010 Revision project

Project manager and work groups



Status of the four NORSOK D-standards (drilling)

Standard	Name	Current revision	Industry pre-hearing	Expected publication of new revision
D-010	Well integrity in drilling and well operations	<u>Rev 4</u> , 06.2013	03.2017	06.2020
D-001	Drilling facilities	Rev 3, 12.2012	12.2017	06.2020
D-002	Well intervention equipment	Rev 2, 06.2013	08.2018	12.2019
D-007	Well testing system	Ed 2, 09.2013	08.2018	06.2020

D-010 revision: Project milestones

Milestone	Date
Open industry pre-hearing	2017.03
Revision project approved	2017.09
Revision commenced, work groups formed	2017.11
Work in work groups	2017.11-2019.09
Finalizing text after presentation to Eg-D	Ongoing
Draft document out for hearing	2019.11
Assessment of comments, text adjustments	2020.03
Publication of Revision 5	2020.06

Major changes in the document (1)

- Standard Norge has adopted ISO format for all NORSOK standards:
 - Changed chapter structure; chapter 3 split into 3 & 4
 - Figures and tables are numbered continuously through the document
 - Informative references are moved to separate Appendix “Bibliography”
- Chapter 3 Definitions:
 - Adapted ISO definitions of «Shall», «Should», «Can» and «May»
 - Included note for PSA’s definition of «Should», relevant for NCS only
- Chapter 5 (old 4) Barriers:
 - New; Barrier requirements matrix
- Chapter 6 (old 5) Drilling
 - Included DMF-approved capping stack emergency preparedness requirements

Major changes in the document (2)

- Chapter 10 (old 9) Plug and Abandonment:
 - Cement height adjustments
 - Significant revision of
 - ☐ EAC Table 22 (Casing cement)
 - ☐ EAC Table 24 (Cement Plug)
 - ☐ EAC Table 52 (Creeping formation)
 - ☐ EAC Table 55 (Material Plug)
 - ☐ EAC Table 56 (Casing bonding Material)
 - ☐ Section 9.6.2 (characteristics of a permanent well barrier)
 - New EAC tables
 - ☐ EAC Table «60» (Perf/Wash/Cement)
 - ☐ EAC Table «61» (Cement Plug in a section-milled interval)

Major changes in the document (3)

- Chapter 14 (old 13) Managed Pressure operations; completely reworked
 - Includes new Appendix B covering operational requirements
 - Technical requirements moved to D-001
- Appendix A; BOP testing matrix
 - Allowing for testing to Section Design Pressure at first BOP installation, current requirement is test to Well Design Pressure test
 - Accepting 14 days test interval, even if well section is completed and new casing is set in the interval.
- Appendix B, MPD operations (new)
 - Includes operational requirements
- Normative references; moved to separate appendix; “Bibliography”

Challenges

- Industry is very busy, again
 - People have little spare time
 - Difficult to prioritize
 - Delays
- D-010 is an important, and very extensive, document
 - Reaching consensus can be time consuming
 - Consensus is a prerequisite for a good standard
 - Maintaining an international profile

Questions?

Back-up slides

D-010 revision project: Overview

- Follows «NORSOK direktiv A-001»
- This will be revision 5
- Follows a five years revision cycle
- Project manager is Arild Thorsrud
- Drilling Managers Forum and NORSOK Expert Group Drilling have been actively used in the quality assurance process
- Organised in 10 work groups
- Has approximately 60 participants from
 - Oil companies
 - Major service companies
 - Specialist companies
 - Petroleum Safety Authority (observers)
- For more information regarding petroleum standardization, see
 - <http://www.standard.no/en/sectors/energi-og-klima/petroleum/>

Goals for petroleum standardisation in Norway

The goals of the NORSOK organisation are to:

- Ensure a high standard of safety
- Increase the use of international standards
- Reduce the number of requirements specific to Norway
- Reduce the number of company specific requirements
- Ensure that standards represent cost-effective solutions
- Increase the competitive strength of the Norwegian continental shelf