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De viktigste endringene fra forrige revisjon

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NORSOK S-003 / AkerBP

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Foreword

The NORSOK standards shall:

- bridge the gap based on experiences from the Norwegian continental shelf where the international standards are unsatisfactorily,
- replace oil company specifications where possible,
- be available as references for the authorities' regulations,
- be cost effective,
- contribute to developments in health, safety and environment in order to achieve an acceptable level of safety, and
- 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 Offshore Norge, Federation of Norwegian Industries and the Norwegian Shipowners Association. They are managed and published by Standard Norway.

Introduction

The purpose of NORSOK S-003 is to ensure that the **design** of offshore petroleum facilities minimises impacts to the environment during operational and decommissioning phases.

The document **enforces best available techniques (BAT) as a method** for managing all **significant environmental aspects** and identifying BAT for several aspects.

The main document is organized in two main parts: Clause 5 includes management of environmental aspects and risks, including circular economy as a new principle, and Clause 6 to Clause 12 stipulate specific technical requirements.

Annex A provides key definitions for barriers, and an overview of typical spill scenarios and associated barriers in a table format.

Scope

This document gives provisions for **systematic management of environmental aspects, and risks** related to the environment in **design, modification and decommissioning** of offshore facilities for production of petroleum, including associated **subsea installations and tie-ins, pipelines and drilling rigs.**

Provisions from applicable governing documents, in the form of acts, regulations, standards, recognised practices, are not repeated in this document.

More stringent provisions than those of this document can apply to certain license areas

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Main changes compared to 2017 revision

Summary of main changes

This document supplements requirements in NORSOK P-002 and NORSOK S-002 , and efforts are made to avoid duplication of requirements. This document covers both topside and subsea.

The main changes from the 2017 edition in summary:

- The title of this document is changed from "Environmental care" to "**Environment**"
- This revision puts an increased focus on best available techniques (BAT) and guidance on when to perform a full BAT assessment
- Clause 5 to Clause 12 are revised and **BAT solutions** have been identified when possible and simplification of documentation requirements regarding BAT documentation
- Circular economy is introduced
- Clearer differentiation has been made between the provisions such as “shall”, “should”, “may”, “can”

Summary of main changes

- Describes what is considered BAT for the various environmental aspects (where possible) – e.g., “Electrical power is considered BAT and should be implemented.”
- Ended up with “should be” instead of “shall be” implemented for most environmental aspects –shall requirements needs a formal deviation process, if not met.
- Kept “shall” requirements for Low NOx turbine, electrically driven motors, recovery of flare gas, and closed flare as BAT, and these **shall** be implemented
- Eases the documentation requirement when the project goes for what is considered BAT.

Main changes

5.2 Environmental aspects

- Expanded the list of environmental aspects that should be included in the assessments, with examples of what is intended
- Environmental aspects mapping and assessment of the effect shall include the host and receiving facility that is impacted by the project.

Main changes
5.4 Best available techniques

Offshore Norge recommended guidelines for Best Available Techniques (BAT assessments – 147 was issud after 2017 version- BAT assessments shall be in accordance with this guideline

BAT assessments shall be a **part of the decision support documentation**.

To ensure continuous improvement and alignment with environmental objectives, organizations should establish a **formalized evaluation process for new technologies** and methods. This process for evaluation of new technologies and methods should include:

- systematic monitoring of technological developments relevant to the sector;
- comparative assessment of environmental performance between new solutions and specified BAT in this document;
- implementation protocols for adopting improvements where they demonstrate clear environmental benefits and operational feasibility.

Main changes

5.6 Circular economy

Circular economy promotes energy efficiency, reduce energy- and material consumption, and minimize waste. Circular economy can be achieved through the principles avoid, minimize, reuse, repair, and recycle.

NS-ISO 59020 [8] should be used for measuring and assessing circularity performance.
NOTE Mercury contamination in the oil and gas value chain gives restriction to reuse material.

Circular solutions shall be included as part of BAT assessment, see 5.4.

Use of recycled materials should be preferred.

EXAMPLE Reduce greenhouse gas emissions by minimising the need for virgin materials.

Main changes

5.7 Disiplines involved in managing environmental aspects

Table 1- removed column with marking of preliminary and main evaluation in the different design phases.

5.2 states already that : The identification of environmental aspects shall at each phase in the project consist of a systematic review of the design and operations. The environmental aspect register shall be updated if the underlying basis for design changes significantly,

Main changes

7.5 Fugitive emisssions

Included: Norwegian Environment Agency report M-512- (coldventing and fugitive emissions – suggestions to BAT solutions) shall be used for additional guidance

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Final remarks

Final remarks from revision lead

- The standard is not "weaker" than the previous version: this has been important both for us as environmental professionals and for the Norwegian Environment Agency
- The standard includes several new "should" requirements that will help ensure consideration for the environment during design
- The standard now reflects what is considered expected technology by the authorities and increases the likelihood of "doing it right the first time," thereby avoiding the use of resources on designing a project that cannot be sanctioned and would then require multiple costly modifications to obtain its operating permit
- The oil and gas industry is under cost pressure and will largely move away from "nice to have" requirements and only use industry standards, so it is important that this revision provides good guidance without requirements that do not contribute to environmental protection