GUIDELINES REGARDING THE FACILITIES REGULATIONS

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Petroleum Safety Authority Norway
Norwegian Environment Agency
Norwegian Directorate of Health
Norwegian Food Safety Authority

PETROLEUM SAFETY AUTHORITY
NORWAY

Guidelines regarding the facilities regulations

CHAPTER I
INTRODUCTORY PROVISIONS

Re Section 1
Scope

The scope of these regulations has been limited compared with the Framework Regulations, so that they only apply to offshore petroleum activities.

The second subsection makes individual requirements in these regulations applicable also for installations and equipment for conducting manned underwater operations from vessels.

For comments to the third subsection of this section, see the guidelines regarding Section 3 of the Framework Regulations.

Re Section 2
Responsibilities

No comments.

Re Section 3
Definitions

Definitions and abbreviations set out in the Framework Regulations are not repeated in these regulations. These guidelines explain or provide supplementary information to definitions as listed in this section.

Fire divisions – Classes A and H:

The ISO 834 standard should be used for standardised fire tests.

Dimensioning accidental load/action:

The dimensioning accidental load/action is typically established as part of a risk assessment as the load/action that occurs with an annual likelihood greater than or equal to $1x10^{-4}$.

Design load/action:

The design load/action can be the same as the dimensioning accidental load/action, but it can be more conservative as well, based on different input and assessments such as ALARP, minimum requirements in the regulations etc. In practice, this may entail that the design accidental load/action must be given a higher value than the dimensioning accidental load/action. As a minimum, the design accidental load/action must always correspond to the dimensioning accidental load/action.

Simpler facilities without accommodation:

Integrated development concept as mentioned under simpler facilities without accommodation litera c, means facilities with gangway connections. The simpler facility can, however, be connected to other facilities through a pipeline system.

Not constituting a danger to other facilities as mentioned under simpler facilities without accommodation litera c, includes the meaning that fire on the facility does not jeopardise the safety of other facilities, e.g. through the possibility of the fire spreading or thermal stress.

Main area:

Main areas can be the

a) living quarter
b) auxiliary equipment area
c) drilling area
d) wellhead area
e) process area
f) storage area for hydrocarbons

Pipeline systems:

Fluids mean liquids and gases.

On a subsea facility, the subsea pipeline normally terminates at the connection to a christmas tree or wing valve. The christmas tree is not considered part of the pipeline system.

On a subsea facility where the above definition cannot be applied, the subsea pipeline ends at the connection to the subsea facility. The connection piece is part of the subsea pipeline.

Subsea pipelines and risers up to and including the chamber for launching or receiving tools for internal maintenance (including inspection), with associated equipment, are considered to belong to the pipeline system. If such a chamber has not been installed, the pipeline system is considered to extend to the first automatic shutdown valve above water.

CHAPTER II
GENERAL PROVISIONS

Re Section 4
Choice of development concept

The following should be taken into account when choosing a development concept:

litera a: important risk contributors, cf. Section 4 and 17 of the Management Regulations,

litera b: organisation, staffing, maintenance, transport solution, working environment, any manned underwater operations,

litera c: operational discharges and emissions, cf. Sections 4 and 17 of the Management Regulations and applicable objectives (cf. Storting White Paper 25 (2002-2003) The Government's environmental policy and the state of the environment in Norway) relating to reduction of emissions and discharges,

litera d: infrastructure, other fields and facilities, distance to land and bases, fishery activities and shipping lanes,

litera e: route, sea depth, seabed conditions, wave height, wind and other natural conditions,

litera f: recovery rate, pressure, temperature, oil or gas, corrosiveness and shallow gas,

litera g: delivery obligations and economy,

litera h: flexibility and expected changes in operating conditions, as well as future use,

litera i: removal and reuse.

The need to qualify new technology should also be taken into account, cf. Section 9.

Re Section 5
Design of facilities

For general requirements related to risk reduction, see Section 11 of the Framework Regulations and Chapters II and V of the Management Regulations.

To fulfil the design requirements as mentioned in the first subsection, the standards NS-EN ISO 13702 with appendices, NORSOK S-001 and S-002 should be used for the health and safety sections. For lifting equipment, the NORSOK R-002 standard should be used.

For mobile facilities that are not production facilities and that are registered in a national shipping register, DNVGL-OS-A101 can be used as an alternative in the area covered by the standard.

In order to fulfil the strategy requirement as mentioned in the third subsection, the principles in the NS-EN ISO 13702 standard should be used for all hazard and accident situations.

In order to fulfil the requirements for design and siting referred to in the fourth subsection, the facility should be designed so that the potential for and consequences of accidents are reduced. Areas, equipment and functions should be arranged, sited and organised so as to, as far as possible:

a) restrict the potential for the accumulation and spread of hazardous materials,
b) restrict the potential for ignition,
c) separate areas containing hazardous materials from each other and from other areas and
d) reduce potential consequences of and the potential for escalation in the event of fire and explosion.

For classification of areas at risk of explosion as mentioned in the fifth subsection, the IEC 61892-7 standard should be used.

Area requirements as mentioned in the sixth subsection, can be fulfilled through both technical and operational measures.

For the design of the area for storing items as mentioned in the seventh subsection, the regulations on hazardous substances (in Norwegian only), the regulations on explosive materials (in Norwegian only) and Chapter 5.4.7 of the NORSOK S-001 standard should be used. For manned underwater operations, Chapter 7.6 of the NORSOK U-100N standard should be used in addition.

In the eighth subsection, facilitation means that it is practicable to make such a system available for use on the facility. This means, amongst other, that the facility is spatially and structurally suited for the siting of such a system, including in respect of weight and other loads/actions. Alternatively, access to necessary pumping and fluid capacity may be arranged by other means. The requirement in the eighth subsection entails that necessary pumping and fluid capacity must be operationally available within a period of time that is considered prudent for assuring the function that the system is to have.

Re Section 6
Design of simpler facilities without accommodation

Specific assessments as mentioned in the second subsection, mean assessments of the overall risk for all activities related to operation and maintenance of the facilities, including transport of employees.

Examples of specific solutions as mentioned in the second subsection, are Sections 14, 32, 37, 41 and 44.

Examples of sections where simpler solutions can be considered than those indicated in the guidelines as mentioned in the third subsection, are Sections 20, 25 and 45.

Re Section 7
Main safety functions

The main safety functions as mentioned in the first subsection, should be designed on the basis of each facility's characteristics. The main safety functions that shall be intact both during and after an accident situation, should be indicated.

The requirement regarding maintenance of main safety functions as mentioned in literas a and e, applies for the time until the areas outside of the immediate vicinity of the accident site have been evacuated, including the time it takes to carry out the search and rescue efforts in these areas.

The requirement regarding maintenance of main safety functions as mentioned in literas b, c and d, applies to the time until the facility has been evacuated, including the time it takes to carry out search and rescue efforts.

Re Section 8
Safety functions

Safety functions as mentioned in the first subsection, are included as barriers against hazard and accident situations as mentioned in Section 5, and Sections 4 and 5 of the Management Regulations.

Safety functions can be divided into active and passive functions.

The design of active safety functions as mentioned in the first subsection, should be based on the standards NORSOK S-001, NS-EN ISO 13702, IEC 61508 and ISO 13849. The Norwegian Oil and Gas' Guideline No. 070 should be used in addition.

To ensure that the active safety functions are always able to function as mentioned in the first subsection, they should be designed so that they can be tested and maintained without impairing the performance. For disconnection of safety functions, see Section 26 of the Activities Regulations.

In order to stipulate the performance for the safety functions as mentioned in the second subsection, the IEC 61508 standard and Norwegian Oil and Gas' Guideline No. 070 should be used where electrical, electronic and programmable electronic systems are used in the structure of the functions.

In order to fulfil the requirement for available status as mentioned in the third subsection, the NORSOK I- 002 standard, Chapter 4 should be used.

CHAPTER III
OVERALL JOINT REQUIREMENTS

Re Section 9
Qualification and use of new technology and new methods

New technology as mentioned in the first subsection, may be new products, analysis tools or known products used in a new way.

The qualification as mentioned in the second subsection, includes investigation and obtaining objective proof that the needs for a specific intended use are covered, cf. Section 21 of the Management Regulations.

The methodology, procedures and equipment used in connection with the qualification, should also be used in the further work.

DNV RP-A203 Qualification Procedures for New Technology can be used to fulfil the requirements regarding methods for the qualification of new technology.

Re Section 10
Installations, systems and equipment

Regulations laid down by the Ministry of Labour and Social Affairs 6 December 2011, pursuant to the Working Environment Act, and entering into force 1 January 2013, including Regulations relating to conduct of work, use of work equipment and appurtenant technical requirements (Conduct of Work Regulations), contain further provisions on certain types of work equipment which is also used in the petroleum activities. Clarification of the scope is directly evident from the individual regulations. In addition, reference is made to the lawmirror (in Norwegian only) of the Norwegian Labour Inspection Authority, in which the requirement of the regulations that are being repealed upon entering into force of the new regulations in pursuance of the Working Environment Act, are included.

With regard to the design of installations, systems and equipment, the following standards should be used in the area of health, working environment and safety:

a) NORSOK D-001 and D-002 for facilities used in drilling and well activities,
b) NORSOK L-002 and L-004 for pipes and valves,
c) NORSOK P-002 for process facilities,
d) NORSOK R-001 for mechanical equipment,
e) NORSOK R-002 for lifting equipment,
f) NORSOK S-005 for machines,
g) NORSOK Z-015 for temporary equipment,
h) NORSOK U-100 and U-101 for diving facilities and breathing equipment,
i) NORSOK U-001 and ISO 13628 for subsea facilities,
j) IMCA/AODC 035 for electrical installations for use under water,
k) IEC 61892 for electrical installations and electrical equipment,
l) NS-EN ISO 11064 as regards human error.

The NS-EN ISO 20815standard can be used for the design of installations, systems and equipment with regard to regularity and reliability.

For installations, systems and equipment on mobile facilities that are registered in a national shipping register, the following standards may be used as alternatives in the area of health, working environment and safety:

a) DNVGL-OS-D101 for marine machinery, pipe systems and mechanical equipment,
b) DNVGL-OS-D201 for electrical systems and equipment, with the exception of production facilities,
c) DNVGL-OS-D202 for instrumentation and control systems, with the exception of production facilities,
d) DNVGL-OS-E101 for facilities used in drilling and well activities.

In order to fulfil the requirement regarding markings as mentioned in the second subsection, the NORSOK Z-DP-002 standard should be used, with the following addition: main components in the installations should be marked with function, and pipe systems should be marked with the relevant fluid and flow direction.

See also Section 5.

Re Section 10a
Ignition source control

In order to fulfil the requirements to ignition source control as mentioned in the first subsection, the standards ISO 13702 chapter 8 and NORSOK S-001 chapter 14 should be used. As regards systematic mapping of potential ignition sources, the standard EN 1127-1 should be used.

On permanently placed facilities, equipment and safety systems in classified areas and in naturally ventilated areas on an open deck shall fulfil the requirements in the Regulations relating to equipment and safety systems for use in explosive areas, cf. these regulations Section 78. As regards mobile facilities, reference is made to MODU Code chapter 6.6 for electrical equipment and chapter 6.7.2 for non-electrical (mechanical) equipment.

Equipment that represents a potential ignition source in naturally ventilated areas on an open deck, should deactivate automatically on gas detection anywhere on the facility, unless this implies increased risk. In such cases, the alarm shall be sounded and it must be possible to deactivate manually from a central or strategic location. Equipment placed in protective rooms, should deactivate automatically on detection of gas in the room, with the added possibility of manual deactivation.

Re Section 11
Loads/actions, load/action effects and resistance

Design loads/actions as mentioned in the first subsection, comprise functional, environmental and accidental loads/actions, inter alia fire and explosive loads/actions, which form the basis for design and operation of installations, systems and equipment. As regards definitions of the terms design accidental load/action and dimensioning accidental load/action, reference is made to Section 3.

Functional loads/actions as mentioned in the fifth subsection, mean, in the case of load-bearing structures, permanent and variable loads/actions.

Dimensioning loads/actions as mentioned in the third and sixth subsection, comprise functional, environmental and accidental loads/actions, inter alia fire and explosive loads/actions.

In order to fulfil the requirements related to **load-bearing structures**, the standards NORSOK N-001 and NORSOK N-003 should be used. In addition, NORSOK N-004 should be used for steel structures.

In order to assess the loss of main safety functions as mentioned in the third subsection, the standard NORSOK Z-013 Appendix B should be used.

The NORSOK S-001 standard should be used for **accidental loads/actions**, in particular Chapter 4.7, in addition to other standards mentioned in these instructions. Special fire conditions such as jet fires, under-ventilated fires in modules, fire on the sea and the like may require additional calculation of fire loads/actions. For mobile facilities that are not production facilities, and that are registered in a national ships' register, DNVGL-OS-A101 Paragraph 2 can be used as an alternative.

For facilities that are intended to leave the field due to bad weather forecasts, the values for environmental loads/actions connected with the least favourable of the following factors may be used:

a) conditions on the field when moving,
b) conditions during moving,
c) weather conditions at the planned new location, with the specified annual likelihoods in NORSOK N-003.

For mobile facilities registered in a national ships' register, the loads/actions that the facility has been exposed to and the expected loads/actions during the period for which the consent for use is applied for, should be taken into account.

To fulfil the requirement regarding loads/actions, load/action effects, resistance and load combinations, the following standards should be used for **pipeline systems**: ISO 13623 Chapter 6 and DNV-OS-F101 Paragraphs 3, 4 and 5 for steel pipelines, DNV-OS-F201 Paragraphs 3, 4 and 5 for catenary metallic risers and API 17J Chapter 5 for flexible pipeline systems.

To fulfil the requirements regarding loads/actions, NORSOK D-001 Chapters 5 and 6 and D-010 Chapters 4 and 5 should be used for equipment for conduct of **drilling and well activities** and other well-related equipment, for example drilling risers, compensators, well control equipment, completion equipment and intervention equipment.

To fulfil the requirement regarding loads/actions, the NORSOK standard L-002, Chapter 6 should be used for **pipeline systems in production plants**.

If the loads/actions, load/action effects or resistance factors are uncertain, measurements or model experiments should be conducted to increase the quality of the analyses. The NORSOK standard N-003, Chapter 10.2.7 should be used for **load-bearing structures**.

Re Section 12
Materials

In order to fulfil the requirement regarding materials and material protection as mentioned in literas a, b and c, the following standards should be used in the area of health, working environment and safety:

a) NORSOK M-001 for material selection,
b) NORSOK M-101 for steel structures,
c) ISO 13623 Chapter 8 and DNV-OS-F101 Paragraphs 6 and 7 for pipeline systems,
d) DNV-OS-F201 Paragraph 7 for catenary metallic risers,
e) API 17J Chapter 6 for flexible pipeline systems,
f) NORSOK N-001 for concrete structures,
g) NORSOK M-501 for choice of coating, pre-processing, application and inspection,
h) NORSOK M-503 for cathodic protection,
i) NORSOK M-601 for piping systems,
j) NORSOK R-004 for insulation of equipment.

For **mobile facilities** registered in a national ships' register, the following standards can be used as an alternative in the area of health, working environment and safety: DNVGL-OS-B101 for metallic materials, DNVGL-OS-C102 Paragraph 2 Section 1 for ship-shaped facilities, DNVGL-OS-C103 Paragraph 2 Section 1 for semi-submersible facilities and DNVGL-OS-C104 Paragraph 2 Section 1 for jack-up facilities.

Methods for control of manufacture and assembly as mentioned in litera b, may include materials control where the sample materials represent the product with regard to manufacture processes, geometrical design and dimensions. Requirements regarding surface quality should be specified in connection with carrying out non-destructive testing of forged and cast goods.

When choosing materials as regards **fire-resistance characteristics** as mentioned in litera d, non-flammable materials should be chosen. Where flammable materials are used, they should limit the spread of fire and produce little smoke, heat and toxic substances. In living quarters, electrical installations should be constructed of halon-free materials. The flame spread and smoke development qualities of the materials should be considered when textiles or surface treatment with paint or other coating is used. The following standards should be used to determine the technical fire qualities of materials:

a) ISO 1182 for non-flammability,
b) ISO 1716 for limited flammability,
c) ISO 5657 for ignitability,
d) ISO 5660-1 for heat emission,
e) ISO 5660-1 for smoke development,
f) IMO Resolution A.653 (16) for spreading of flames,
g) ISO 9705 for testing of surface products,
h) NT Fire 036 for testing of pipeline insulation,
i) in) IMO Resolution A.471 (XII) for textiles
j) IEC 60331 for cables which shall function during a fire,
k) IEC 60332 for self-extinguishing cables in areas with explosion hazard.

When choosing materials in light of the employees' **health and working environment** as mentioned in litera h, materials should be used which are not harmful to the employees alone or in combination with other materials or gases. When choosing materials and surfaces, emphasis should be placed on comprehensive solutions adapted to the intended use and cleaning and maintenance requirements.

Re Section 13
Materials handling and transport routes, access and evacuation routes

The terms transport, access and evacuation routes also include stairs, doors, hatches, etc.

When designing for **materials handling and personnel traffic** as mentioned in the first subsection, the following factors should be taken into consideration:

a) the need for types and number of lifting and transport equipment units, including cranes and elevators,

b) the need for loading and unloading areas, facilitation for forklifts, trolleys, etc.
c) access to areas and work sites in connection with operations and maintenance,
d) safe handling of cargo.

For handling of materials by means of lifting equipment the standard NORSOK R-002 Appendix B should be used.

The various work sites should be designed so that they can be serviced and maintained without the use of temporary equipment such as scaffolding, ladders, etc. For permanent solutions, stair ladders should be chosen over vertical ladders.

For mobile facilities that are registered in a national ships' register, the Norwegian Maritime Authority's Regulations relating to the construction of mobile facilities Sections 14, 15, 16 and 17 can be used for access and transport routes, with the following additions:

a) thresholds in access routes should be avoided or made as low as possible, cf. Section 20,
b) ladders, where there is danger of falling to a lower level, should have self-closing gates, cf. NORSOK S-002 Chapter 5.1.2.

The following standards should be used for design of the **transport routes** as mentioned in the first subsections and **access** as mentioned in the second subsection:

a) NORSOK S-002 Chapters 5.1, 5.2.1. and Appendix B,
b) NORSOK C-002 Chapters 5 (for main stairs) and 6,
c) NORSOK C-001 Chapters 7.28 and 7.1.5.

As regards design of scaffolding and ladders, Chapter 4 of the Regulations concerning the construction, design and production of work equipment and chemicals (Producer regulations) (in Norwegian only) should be used.

To fulfil the requirement for **escape routes** as mentioned in the third subsection, the NORSOK S-001 standard, Chapters 5, 6 and in particular 21, should be used with the following addition: evacuation routes should be designed so that there is free passage for personnel wearing smoke-diver and/or fire-fighting equipment.

For mobile facilities that are not production facilities, and that are registered in a national ships' register, DNVGL-OS-A101 can be used as an alternative in the area covered by the standard. For requirements related to escape routes from helicopter decks, see Section 70.

The Norwegian Shipowners' Association Norm for physical-chemical working environment on mobile facilities built before 1 August 1995 and operating on the Norwegian shelf (in Norwegian only) can be used as an alternative to NORSOK S-002N for those areas covered by the norm.

Re Section 14
Ventilation and indoor climate

To fulfil the requirement regarding **ventilation** as mentioned in the first subsection, the standards NS-EN ISO 15138, NORSOK H-003 and S-001 Chapter 16.4 should be used, with the following addition: when stipulating the need for air exchange, account should be taken of both the risk of accumulation of hazardous and flammable gases and the need for weather protection, cf. Section 22.

For mobile facilities that are not production facilities, and that are registered in a national ships' register, DNVGL-OS-D101 Chapter 2, Paragraph 4 can be used as an alternative.

The requirements related to **indoor climate** as mentioned in the second subsection, apply to living quarters and indoor work areas, including chambers for manned underwater operations. The requirements entail that account is taken of the fact that air quality is affected by construction materials, furniture and fittings, personnel, activities and processes, cleaning and maintenance. In order to fulfil these requirements, the following should be used:

a) the Norwegian Labour Inspection Authority's guidelines on climate and air quality in the workplace,
b) The National Institute of Public Health - recommended technical standards for indoor climate,
c) NORSOK S-002 Chapter 5.7 and Appendix A,
d) NORSOK U-100 Chapters 5.2.2 and 5.2.3.

The Norwegian Shipowners' Association Norm for physical-chemical working environment on mobile facilities built before 1 August 1995 and operating on the Norwegian shelf (in Norwegian only) can be used as an alternative to NORSOK S-002 for the areas covered by the norm.

Re Section 15
Chemicals and chemical exposure

This section covers technical provisions to reduce acute and prolonged chemical exposure related to transport, transfer, use and disposal of chemicals. The section also covers processes that emit chemical components.

To fulfil the requirements for technical solutions that prevent harmful chemical influences on people as mentioned in the first subsection, the NORSOK S-002 standard, Chapters 4.4.6, 5.4 and Appendices C2 and G 1.2 should be used.

To fulfil the requirements related to design and location of installations for storage and use as mentioned in the second subsection, the NORSOK P-002 standard, Chapter 20 should be used in the area health, working environment and safety.

For use of chemicals, see Section 36 and Chapter XI of the Activities Regulations.

For design and location as regards fire and explosion hazard as mentioned in the second subsection litera c, reference is made to Section 5 and the Regulations relating to explosive substances (in Norwegian only) Chapter 7.

Regulations laid down by the Ministry of Labour and Social Affairs 6 December 2011, pursuant to the Working Environment Act, and entering into force 1 January 2013, contain further provisions on soluble chromium VI in cement. Clarification of the scope is directly evident from the individual regulations. In addition, reference is made to the lawmirror (in Norwegian only) of the Norwegian Labour Inspection Authority, in which the requirement of the regulations that are being repealed upon entering into force of the new regulations in pursuance of the Working Environment Act, are included.

The Norwegian Shipowners' Association Norm for physical-chemical working environment on mobile facilities built before 1 August 1995 and operating on the Norwegian shelf (in Norwegian only) can be used as an alternative to NORSOK S-002 for the areas covered by the norm.

Re Section 16
(This section has been repealed)

Re Section 17
Instrumentation for monitoring and registration

For requirements related to collecting and making data available, see Section 19 of the Management Regulations.

The instrumentation as mentioned in the first subsection, should be designed so that it can monitor and record:

a) structural integrity for load-bearing structures and pipeline systems
Monitoring of structural integrity includes recording parameters that result in significant tension or compression stress, or large movements as a result of waves and currents.

b) critical degradation of materials
Critical degradation may include corrosion and erosion. In order to monitor corrosion, multiple independent corrosion monitoring systems may be relevant if maintenance, including inspection, is difficult to perform.

c) critical operational parameters
Critical operational parameters can include the drilling fluid's properties, pressure and particle content in the production stream, pressure in seal oils in swivels and gas composition and pressure in facilities for manned underwater operations.

Data on natural conditions (environmental data) as mentioned in the second subsection, means data on oceanography, seismology and meteorology, including data that is of significance for the flight weather service.

In order to fulfil the requirement relating to instrumentation for meteorological and oceanographic data, the standard NS-EN ISO 19901 Part 1 should be used. Measurement of seismological data should be carried out on land or on the seabed, at a sufficient distance from the facilities to ensure that the recording of data can take place without significant interference from the activities on the facilities. The measurement station should preferably be located on land since this usually provides more reliable and better data than a measurement station on the seabed.

For instrumentation related to monitoring and registration of pollution, see Chapter X of the Activities Regulations. New type as mentioned in the third subsection, means a type that deviates materially from previous structural solutions, i.e. a prototype. When facilities have instruments to measure structural behaviour, environmental data should be measured simultaneously.

Re Section 18
Systems for internal and external communication

In order to fulfil the requirements relating to design of internal communication and alarm systems as mentioned in the first subsection, the following standards should be used: NORSOK S-001, Chapter 17 for universal audio and visual alarms, T-001 and T-100 for alarm and communication systems and U-100 Chapter 7.14 for internal communication systems in manned underwater operations. In addition:

a) two-way communication systems or internal radio communication should be used where necessary to communicate important information or to quickly establish contact with personnel,
b) 112 should be used as the internal emergency number on the facility,
c) PA systems that can be operated from strategic locations on the facility should be used, so that all personnel can be notified of hazard and accident situations, see also Section 77 of the Activities Regulations. The central control room or the bridge should be given priority to send messages via the PA system,
d) general alarm and evacuation alarm should be possible to trigger from the central control room and the command bridge, and the evacuation alarm should be possible to trigger from the radio room.

The requirement for at least two independent chains of notification as mentioned in the second subsection, implies that the alternative (secondary) chains of notification shall be independent from the primary chain of notification as regards power supply and availability during hazard and accident situations, including being resistant against the dimensioning established accidental loads/actions in a defined period of time. Permanent communication systems such as fibre optic cables, radio lines or satellite systems should be used if the position of the facility makes this possible. If two independent chains of notification through permanent communication connections cannot be realised, one of the permanent communication connections should be replaced by communication through the maritime mobile service.

Re Section 19
Communication equipment

When selecting equipment as mentioned in the first subsection, temporarily and permanently manned facilities should be provided with the following equipment:

a) two separate permanently installed maritime VHF radios with DSC,
b) radio beacons for helicopter navigation,
c) two separate permanently installed aero mobile VHF radios, as well as portable aero mobile VHF radios,
d) one NAVTEX receiver, alternatively other accepted arrangements for reception of maritime safety information (MSI=Maritime Safety Information).

When selecting equipment as mentioned in the first subsection, **evacuation and rescue equipment** should be provided with the following equipment that is approved for such use in accordance with international and national standards:

a) lifeboats: one permanently installed VHF radio and one RADAR-SART or AIS-SART,
b) rafts: a necessary number of portable VHF radio sets and RADAR-SART or AIS-SART located so that they are easily accessible for bringing along in rafts, e.g. in escape chute containers,
c) man overboard boats (MOB boats): watertight VHF that maintains communication under the conditions that the MOB boat is intended to operate under, and which does not prevent the crew from using both hands for manoeuvring the boat or to take part in rescue operations. A permanently installed VHF or an extra VHF.

Protection as mentioned in the second subsection, means, inter alia, that the equipment shall be located in such a manner that communication is not disrupted. The two maritime VHF radios with DSC should be located in separate rooms so that they cannot be made inoperable by a single incident. This also applies to the permanently installed aero mobile radios. VHF stations in lifeboats or MOB boats should be designed and located so that they can be used at the same time as the boats are manoeuvred with the engine at maximum revolutions.

With regard to the selection and design of communication equipment as mentioned in the first and second subsections, the NORSOK U-100 standard, Chapter 7.14 should be used for **manned underwater operations**.

It follows from the rules and regulations of the Norwegian Communications Authority that any work on or modification of approved equipment is not allowed. If these rules are violated, the approval will cease.

CHAPTER IV
DESIGN OF WORK AND COMMON AREAS

Re Section 20
Ergonomic design

In order to fulfil the requirements relating to design as mentioned in the first and second subsections, the following standards should be used: NORSOK S-002, Chapters 5.2, 4.4.4, 4.4.5 and Appendices B and C and ISO 6385, with the following additions:

a) there should be easy access for service, inspection, readings and maintenance,
b) it should be possible to operate outdoor handles, switches, etc. while wearing gloves.

For workplaces in front of screens, see Section 34 of the Activities Regulations. See also Section 21.

The Norwegian Shipowners' Association Norm for physical-chemical working environment on mobile facilities built before 1 August 1995 and operating on the Norwegian shelf (in Norwegian only) can be used as an alternative to NORSOK S-002 for the areas covered by the norm.

Re Section 21
Human-machine interface and information presentation

During design as mentioned in the first subsection, an analysis should be conducted of the human-machine interface, including necessary task and function analyses. The standards NORSOK S-002 Chapter 4.4.5 and NS-EN 614 Part 2 should be used for such analyses. The NS-EN ISO 11064 standard should be used for design of the central control room. NORSOK S-002 Chapter 5.2.2 should be used for requirements regarding human-machine interfaces.

In order to fulfil the requirement for information as mentioned in the second subsection, the standards EN 894 Part 1-3 and NS-EN 614 Part 1 should be used, with the following addition: the information should be suitably structured and consistent with regard to the use of colour, text and symbols.

The Norwegian Shipowners' Association Norm for physical-chemical working environment on mobile facilities built before 1 August 1995 and operating on the Norwegian shelf (in Norwegian only) can be used as an alternative to NORSOK S-002 for the areas covered by the norm.

For the design of alarm systems, refer to Section 34a on control and monitoring system.

Re Section 22
Outdoor work areas

In order to fulfil the requirement relating to weather protection as mentioned in the first subsection, the NORSOK S-002 standard Chapters 4.4.9 and 5.8 should be used.

Risks as mentioned in the second subsection, may include accumulation of flammable gases, risk of increased explosion pressure and potential reduced access for firefighting.

With regard to new constructions and modifications, weather protection requirements should be specified at an early stage.

Re Section 23
Noise and acoustics

In order to prevent noise that is harmful to hearing as mentioned in the first subsection, the NORSOK S-002 standard Chapters 4.4.7, 5.5 and Appendices F and H should be used for the design of facilities, with the following addition: during planning, consideration should be given to the fact that the use of ear protection is not a means of fulfilling the noise requirements, cf. Section 38 of the Activities Regulations.

In order to fulfil the requirements regarding noise in the individual areas as mentioned in the second subsection, the NORSOK S-002 standard Chapter 5.5 and Appendix A should be used, with the following additions:

a) as a consequence of varying operational conditions and uncertainty in the measurements, etc., deviations of up to 3 dB(A) from the values specified in NORSOK S-002 Chapter 5.5 and Appendix A are acceptable,

b) Work in areas with the highest noise limit (Lmax =110 dB(A)), cf. NORSOK S-002 Chapter 5.5 and Appendix A, should only be permitted during brief inspections or work tasks which will be performed in an area that does not have through traffic to other areas. Provisions should be made for noise-deflection of noisy equipment during maintenance or other work in the area, cf. Section 33 of the Activities Regulations.

In order to fulfil the requirement relating to noise, the NORSOK U-100 standard Chapter 5.2.2.6 should be used for manned underwater operations.

As regards requirements relating to acoustics as mentioned in the second subsection, the NORSOK S-002 standard Chapter 5.3.3 should be used. With regard to sound insulation, the NORSOK S-002 standard Chapter 5.5, Table 1 should be used.

The Norwegian Shipowners' Association Norm for physical-chemical working environment on mobile facilities built before 1 August 1995 and operating on the Norwegian shelf (in Norwegian only) can be used as an alternative to NORSOK S-002 for the areas covered by the norm.

Re Section 24
Vibrations

Regulations laid down by the Ministry of Labour and Social Affairs 6 December 2011, pursuant to the Working Environment Act, and entering into force 1 January 2013, contain further provisions on protection against mechanical vibrations. Clarification of the scope is directly evident from the individual regulations. In addition, reference is made to the lawmirror (in Norwegian only) of the Norwegian Labour Inspection Authority, in which the requirement of the regulations that are being repealed upon entering into force of the new regulations in pursuance of the Working Environment Act, are included.

In order to fulfil the requirements relating to vibrations, the NORSOK S-002 standard Chapter 4.4.7, 5.5.5 and Appendices A and E should be used. For mobile facilities, this standard should be used for vibrations in the 5–80 Hz frequency range.

In order to assess the reaction of human beings to low-frequency vibrations, the NS 4931 standard should be used. The Norwegian Shipowners' Association Norm for physical-chemical working environment on mobile facilities built before 1 August 1995 and operating on the Norwegian shelf (in Norwegian only) can be used as an alternative to NORSOK S-002 for the areas covered by the norm.

Re Section 25
Lighting

Lighting can be artificial daylight, daylight or direct sunlight. The lighting should be particularly good and correct in the control room, cabins and other rooms where sight-intensive work takes place, where display screen equipment is used regularly and where the work requires good visibility during various weather conditions.

In order to fulfil the requirement relating to lighting, the NORSOK S-002 standard Chapter 5.6, 4.4.8 and associated lighting values in Appendix A should be used for the individual rooms and areas on the facility. There should also be specific lighting if the general lighting is not adequate for readings, service and maintenance.

The Norwegian Shipowners' Association Norm for physical-chemical working environment on mobile facilities built before 1 August 1995 and operating on the Norwegian shelf (in Norwegian only) can be used as an alternative to NORSOK S-002 for the areas covered by the norm.

Re Section 26
Radiation

Radiation as mentioned in the first subsection, means ionising and non-ionising radiation.

In order to fulfil the requirement relating to radiation as mentioned in the first subsection, the NORSOK S-002 standard Chapters 5.9 and 5.10 should be used. See also Section 37 of the Activities Regulations.

Re Section 27
Personnel transport equipment

Equipment as mentioned in the first subsection, includes personnel winches, personnel baskets and the like.

With regard to equipment that can be used for transport of personnel as mentioned in the first subsection, see also Section 92 of the Activities Regulations.

In order to fulfil the requirements regarding equipment as mentioned in the first subsection, the NORSOK R-002 standard Appendix G should be used. There should be sufficient personnel winches to cover all drilling and well activities on the facility.

Re Section 28
Safety signs

Regulations laid down by the Ministry of Labour and Social Affairs 6 December 2011, pursuant to the Working Environment Act, and entering into force 1 January 2013, contain further provisions on safety signs and signalling. Clarification of the scope is directly evident from the individual regulations. In addition, reference is made to the lawmirror (in Norwegian only) of the Norwegian Labour Inspection Authority, in which the requirement of the regulations that are being repealed upon entering into force of the new regulations in pursuance of the Working Environment Act, are included.

For safety signs as referred to in the final subsection, the standards NORSOK C-002 and NS 6033 can also be used.

CHAPTER V
PHYSICAL BARRIERS

Re Section 29
Passive fire protection

For determination of fire loads/actions according to the first subsection, see Section 11.

Adequate fire resistance as mentioned in the first subsection, should be determined in relation to recognised standards or calculation models. When stipulating fire resistance for load-bearing structures, varying material utilisation can be taken into account.

To determine the fire resistance of a structure, the test methods in standards ISO 834, ISO 3008, ISO 3009 and NT Fire 021 should be used. To determine the ability of passive fire protection materials to withstand jet fires, the ISO 22899-1 standard Part 1 General requirements should be used.

In order to fulfil the requirements for loadbearing properties, integrity and insulation properties as mentioned in the first subsection, the NORSOK S-001 standard Chapter 19 should be used, with the following addition: for gas and liquid-filled vessels and pipe sections, the passive fire protection should be sufficient to prevent rupture before depressurisation is carried out.

For mobile facilities that are not production facilities and that are registered in a national shipping register, DNVGL-OS-A101 (2) Paragraph 2 and OS-D301 may be used as an alternative within the areas covered by the standards.

Re Section 30
Fire divisions

For fire divisions in living quarters, see Section 31.

For determination of fire and explosion loads/actions as mentioned in the first and second subsections, see Section 11.

The main fire divisions in closed areas should be able to withstand an explosion load of at least 70 kPa for 0.2 seconds. For other areas on the facility, the standard DNVGL-OS-A101 Paragraph 2 D 600 should be used. Fire divisions with coated or sprayed-on fire protection material that does not fulfil the requirements

for inflammability, may be used if an overall assessment indicates that this is prudent from a safety point of view, cf. Section 12.

Fire divisions as mentioned in the second subsection, should satisfy fire class

a) A-60 for control and emergency preparedness rooms, rooms for fire pump systems and rooms for emergency power source with associated distribution equipment and fuel tanks if these rooms are located in an area that cannot be exposed to hydrocarbon loads/actions. Fire class A-60 is the recommended solution for these rooms since the second subsection requires protection of technical barrier elements in the room. This means that the rooms should be specially protected against fire on the outside of the room, and there should therefore be passive fire protection on the outside of the plate making up the division.
b) A-0 for rooms for electrical equipment, fan rooms, rooms where flammable or easily ignited goods are stored and rooms for fire pumps that are located in pontoons and columns.

Special fire conditions may entail a need for fire divisions with higher fire resistance.

Examples of penetrations in fire divisions as mentioned in the last subsection, may include ventilation ducts, pipes, cables and beams, as well as windows and doors. The test methods in the following standards should be used for penetrations:

a) ISO 3008 or NS 3907 for doors,
b) ISO 3009 or NS 3908 for windows,
c) IMO Resolution A.754 (18) for other types of penetrations such as ducts, pipes and cable penetrations.

Penetrations in main fire divisions and fire divisions with fire class H should be avoided to the extent possible.

For mobile facilities that are not production facilities and that are registered in a national ships' register, DNV-OS-D301 Chapter 2, Paragraph 1 can be used as an alternative.

Re Section 31
Fire divisions in living quarters

If the living quarters are located on a separate facility as mentioned in the first subsection litera c, external surfaces and distance to nearby facilities should nevertheless be such that a fire on these nearby facilities or in the surroundings (the sea) does not entail an unacceptable risk for personnel and functions in the living quarters.

In order to fulfil the requirement relating to interior design as mentioned in the second subsection, the NORSOK S-001 standard Chapter 19.4.6 should be used.

Re Section 32
Fire and gas detection systems

For design of the system as mentioned in the first subsection, the standards NS-EN ISO 13702 with Appendix B.6 and NORSOK S-001 Chapters 12 and 13 should be used.

The requirement for independence as mentioned in the first subsection, entails that the fire and gas detection system comes in addition to systems for management and control and other safety systems. The fire and gas detection system may have an interface with other systems as long as it cannot be adversely affected as a consequence of system failures, failures or isolated incidents in these systems.

The requirement regarding limiting the consequences as mentioned in the second subsection, entails that relevant safety functions are activated, see Sections 33, 36 and 37.

Facilities that are not permanently manned, should also have a dedicated gas detection function for the area around and on the helicopter deck. Detection of gas should be shown by means of a light signal that is visible at a safe distance from the facility.

For mobile facilities that are not production facilities, and that are registered in a national ships' register, DNV-OS-D301 Chapter 2, Paragraph 4 can be used as an alternative.

Re Section 33
Emergency shutdown system

When designing the emergency shutdown system, the standards NS-EN ISO 13702 and NORSOK S-001 should be used.

The requirement for independence as mentioned in the first subsection, entails that the emergency shutdown system comes in addition to systems for management and control and other safety systems. The emergency shutdown system may have an interface with other systems if it cannot be adversely affected as a consequence of system failures, errors or isolated incidents in these systems.

An unambiguous command structure as mentioned in the second subsection, means that the flow of signals and command hierarchy are clearly stated. When designing the manually activated function as mentioned in the second subsection, the NORSOK S-001 standard Chapters 10.4.1 and 15.3.4 should be used.

The requirement related to stopping, isolation and partitioning as mentioned in the third subsection, means that the following valves normally will be emergency shutdown valves:

a) subsurface safety valves
b) wing valves and automatic master valves for production or injection wells,
c) valves on the wellhead and christmas tree in connection with gas lifting or chemical injection ,
d) partitioning valves in the processing plant,
e) isolation valves against pipeline systems,
f) partitioning valves in or between the fire areas on the facility.

The requirement related to isolating and partitioning the fire areas on the facility entails, inter alia, that a sufficient number of sectioning valves shall be installed in the processing plant to ensure that any potential fire load/action from leaks in each and every segment does not make an uncontrolled spread and/or escalation possible in the area where the leak started. The concrete barrier elements that are to have the necessary fire resistance, should be determined on the basis of each and every fire area and relevant barrier functions. In order to determine the heat load/action per time unit and the extent of fires, potential initial leak rates that can occur, should be used, and systems for depressurisation can be taken into account. To make the design robust, leak rates based on conservative preconditions should be used; i.e. initial rates that result in unfavourable combinations of heat load/action, fire size and fire duration.

The number and location of sectioning valves in the processing plant should be determined on the basis of the fire and explosion strategy, cf. Section 5.

For mobile facilities that are not production facilities, and that are registered in a national ships' register, DNVGL-OS-A101 Paragraph 5 can be used as an alternative.

Re Section 34
Process safety system

The requirement for independence as mentioned in the first subsection, entails that the process safety system is in addition to systems for management and control and other safety systems. The process safety system can have an interface with other systems if it is not adversely affected as a consequence of system failures, errors or isolated incidents in these systems.

The ISO 10418 standard, in combination with NORSOK P-002, should be used for design of process safety systems. Auxiliary facilities containing flammable fluids should also be secured in accordance with the methods described in these standards. Overpressure protection should be designed in accordance with API RP 520/NS-EN ISO 4126 and API 521/NS-EN ISO 23251.

The requirement for two independent safety levels as mentioned in the third subsection, entails that the process safety levels shall be protected against dependent errors, so that an isolated error does not lead to the failure of both safety levels.

Re Section 34a
Control and monitoring system

Control and monitoring systems may be interfaced with other systems, but it should be ensured that this does not weaken the system. In addition, Norwegian Oil and Gas' Guideline No. 104 should be used as a basis for protecting against ICT-related hazards.

Alarms should be defined and designed such that

a) the alarms that are presented, are relevant, easy to register and understand, and clearly show where possible nonconformities and hazardous situations have arisen,
b) the alarms are coded, categorised and assigned priority based on the safety significance of the alarms and how quickly measures must be taken to avoid undesirable consequences,

c) the alarm systems allow for suppressing and reducing alarms, so as to avoid mental stress for control room personnel during interruptions in operations and accident incidents.

With regard to the design of the alarm systems, the principles of the Norwegian Petroleum Directorate's (now the Petroleum Safety Authority Norway's) publication YA-710 (English edition YA-711) should be used.

Re Section 35
Gas release system

The requirement regarding the gas release system as mentioned in the first subsection, entails that gases that are flammable or harmful to health shall be routed to a safe emission site, and that any potential heat load/action shall be calculated, cf. Section 11.

In order to fulfil the requirement regarding the gas release system as mentioned in the first subsection, the standards NS-EN ISO 13702 Chapter 7 and Appendix B.2, ISO 23251, NORSOK S-001 Chapter 11 and P-002 Chapter 21 should be used, with the following additions:

a) rapid depressurisation should be selected rather than passive fire protection. For fire loads/actions, reference is made to Section 11,
b) when designing gas release systems, external environment considerations should be safeguarded by preferably flaring flammable, toxic or corrosive gases.

In addition to manual activation as mentioned in the second subsection, activation signals may also come from relevant safety systems such as the emergency shutdown system.

In order to secure liquid separators against overfilling as mentioned in the third subsection, the production should be shut down in the event of a high liquid level.

Re Section 36
Firewater supply

Sufficient capacity as mentioned in the second subsection, means the capacity necessary to supply all firefighting equipment in the facility's largest fire area plus the largest of the adjacent areas. A pump start-up failure does not need to be used as a basis for capacity calculations for the largest fire area plus the largest adjacent area at the same time as a pump is out of operation for a short period (less than 24 hours). On simpler facilities without accommodation, the supply can come from a dedicated water reservoir, from seawater pumps or other available water supply.

In order to fulfil the other requirements as mentioned in this section, the standard NORSOK S-001 Chapter 20 should be used, with the following addition: for hydraulic calculations, a recognised method shall be used.

For mobile facilities that are not production facilities, and that are registered in a national ships' register, DNV-OS-A301 Chapter 2, Paragraphs 3, 6 and 7 can be used as an alternative.

Chemicals added to firewater shall be tested and assessed as mentioned in Section 62 of the Activities Regulations.

Re Section 37
Fixed fire-fighting systems

In order to fulfil the requirement for fixed systems as mentioned in the first subsection, the standards NS-EN ISO 13702 Chapter 12 and Appendix B.8 and NORSOK S-001 Chapter 20 should be used, with the following additions:

a) the systems should be designed so that capacity and extinguishants, as well as location and selection of nozzles, provide effective fighting of defined fires. The risk represented by other potential fires should be reduced to the greatest extent possible,
b) the requirement for rapid and efficient fire-fighting as mentioned in the first subsection, makes it difficult to use CO2 as an extinguishant in rooms where personnel may be located,
c) in areas where there may be strong winds, this should be taken into account when placing nozzles and in relation to the need for increased capacity,
d) a water mist system may be installed if realistic tests have been conducted showing that the system fulfils its intended function,

e) when locating nozzles for the extinguishant in engine rooms for diesel engines, particular consideration should be given to pumps and pipes in the fuel unit, and separate spot protection should be installed, if applicable,
f) when choosing among equivalent fire solutions, choose the solution that uses the least environmentally harmful extinguishant, cf. Section 3a of the Product Control Act (in Norwegian only).
g) for chambers in diving facilities, the requirement regarding efficient firefighting entails that it shall be possible to activate internal extinguishing equipment both from the outside and the inside. The firefighting equipment for the diving facility should cover the entire facility, and have capacity to also put out fires that may arise inside the chambers. The firefighting equipment should also have the capability of cooling down the chamber facility and gas storage area, as well as cover other areas that shall be manned in order to evacuate divers.

In order to fulfil the requirement regarding activation of the systems as mentioned in the second subsection, the NORSOK S-001 standard, especially Chapter 20, should be used.

For mobile facilities that are not production facilities and that are registered in a national ships' register, DNV OS-D301 Chapter 2, Paragraphs 3, 4, 7 and 8 may be used as an alternative within the area covered by the standard.

Re Section 38
Emergency power and emergency lighting

To fulfil the requirement regarding emergency power as mentioned in the first through third subsections, the standards NS-EN ISO 13702 Chapter 10 and Appendix C.1, NORSOK S-001 Chapter 18 and IMO 2009 MODU CODE Chapter 5 should be used, with the following addition: emergency power consumers should be limited to equipment that contributes to maintaining the facility's integrity in an emergency situation. The NORSOK R-002 standard Chapter 5.15 should be used for lifting equipment.

For design of emergency lighting as mentioned in the last subsection, the EN 1838 standard should be used. There should be emergency lighting in those areas where personnel can be located in a hazard and accident situation. The emergency lighting should contribute to ensure evacuation on and from the facility, and indicate the location of manual firefighting equipment and other safety equipment. The emergency lighting should be connected to the emergency power system or have its own battery as a power source.

Re Section 39
Ballast system

To fulfil the requirements to ballast systems the Norwegian Maritime Authority’s Regulations relating to ballast systems on mobile facilities (in Norwegian only) should be used, plus NORSOK S-001 standard Chapter 23.4.

To fulfil the requirements to discharge and drainage systems in non-hazardous areas (no hazardous explosive atmosphere under normal operations) DNVGL-OS-D101 Chapter 2, Section 3 should be used.

Re Section 40
Open drainage systems

Open drainage systems as mentioned in the first paragraph means systems that collect liquid, but are not pressurised.

The discharge point for drainage water should be located such that potential discharges as mentioned in the second subsection have the least possible impact on the marine environment, and such that discharges are not a nuisance to personnel on vessels near the facilities.

As regards the design of open drainage systems, the following standards should be used in the area of health, working environment and safety: NS-EN ISO 13702 Chapter 9 and Appendix B.4, NORSOK S-001 Chapter 8 and P-002 Chapter 28. In addition, NORSOK S-001 Chapter 23 should be used for mobile facilities.

CHAPTER VI
EMERGENCY PREPAREDNESS

Re Section 41
Equipment for rescue of personnel

In order for the facility to have equipment available at all times as mentioned in the first subsection, there should be two independent man overboard boat systems (MOB boat systems), cf. Section 5 litera c. The boat systems can be located on the facility, on the standby vessel or with one system on each of these.

For the design of launching and recovery appliances for rescue and evacuation means, reference is made to Section 69.

Re Section 41a
Evacuation and rescue means for manned underwater operations

In order to fulfil the diving facilities requirements as mentioned in the second subsection, Chapter 9-3 of the NORSOK U-100N standard should be used.

In order to fulfil the design requirements of hyperbaric evacuation units as mentioned in the fifth subsection, the NORSOK U-100N standard should be used, with the following addition: hyperbaric evacuation units should be able to be lifted out of the water using a single attachment point.

In order to achieve the necessary safety level for evacuation at sea using hyperbaric evacuation means, it is important to safeguard, amongst other, the following:

a) the safety of personnel
b) structural integrity (structural safety)
c) sufficient propulsive and manoeuvring ability after launch
d) qualification, trials and testing, cf. Section 9 of the present regulations and Section 19 of the Framework Regulations.

For the design of flange connections, IMCA D 051 Hyperbaric Evacuation Systems (HES) Interface Recommendations should be used.

Section 42
Materials for action against acute pollution

Materials for action against acute pollution as mentioned in the first, second and third subsections should be functional, robust, flexible and adapted in order to function effectively under prevailing weather, wind and current conditions in the entire area influenced by the pollution.

Realistic conditions as mentioned in the third subsection, means that variable parameters, such as weather, wind and current conditions and changes in the physical and chemical properties of the pollution over time should be selected so they are representative of the conditions that the material will operate under.

It should be possible to store the materials in such a way that they can be mobilised at any given time in accordance with the emergency preparedness plan. It should be possible to incorporate the materials in a system for coordinated action against acute pollution.

Re Section 43
Emergency preparedness vessels

Emergency preparedness vessel means both vessels that have emergency response functions as their primary task and other vessels that will be used, inter alia, for search and rescue, monitoring safety zones or actions against acute pollution.

Emergency response functions can include

a) monitoring and management of operations,
b) handling of oil booms and skimmers,
c) handling of dispersion equipment,
d) loading and unloading of recovered oil,
e) operation in areas where there is a risk of explosion and fire.

Aircraft that are to be used in actions against acute pollution, should be designed so that they can be used to carry out dispersion measures and so that they can contribute to monitoring pollution and directing seagoing vessels that take part in the action.

Emergency preparedness vessels that have specific tasks in relation to the facilities should fulfil the technical requirements in the Norwegian Maritime Authority's Regulations relating to emergency preparedness vessels.

Re Section 44
Means of evacuation

To fulfil the requirements for evacuation and means of evacuation as mentioned in the first, second and third subsections, the NORSOK S-001 standard Chapter 21 should be used, with the exception of the reference to SOLAS and national maritime requirements in 21.4.3.

Major modifications or changes in the prerequisites for use for the facility may entail that lifeboats and escape chutes as mentioned in the third subsection, shall be installed.

DNVGL-OS-E406 should be used in the design of free-fall lifeboats.

Dimensioning of hulls and superstructures on lifeboats should be based on control of the limit states as given in ISO 19900, DNVGL-OS-C101 or NORSOK N-001.

Re Section 45
Rescue suits and life jackets, etc.

No comments.

Re Section 46
Manual fire-fighting and firefighters' equipment

In order to fulfil the requirements for manual firefighting and firefighters' equipment, the standards NS-EN ISO 13702 Appendix B.8.12 and NORSOK S-001 Chapter 20.4.7 and 8 should be used. In order to fulfil the requirements for firefighters' equipment, the NORSOK S-001 standard Chapter 22.4.2.6 should be used.

CHAPTER VII
ELECTRICAL INSTALLATIONS

Re Section 47
Electrical installations

When designing electrical installations, consideration should be given to the output needs, distribution system, earthing system, protection against interruption and adequate selectivity between protections in the event of errors in the installation.

The requirement for protection against electric shock during normal operation as mentioned in litera a, entails that personnel shall not be accidentally exposed to current flow, or the current shall be limited to a non-hazardous level.

The requirement relating to protection against electric shock in the event of errors as mentioned in litera b, entails that quick, automatic disconnection of the power supply shall be provided when a failure arises that can lead to a dangerous flow of current for personnel that unintentionally come into contact with exposed parts of the installation.

The requirement relating to protection against thermal effects as mentioned in litera b, entails that suitable protection shall be used to guard against abnormal heat development, arcing and fire in the installation.

The requirement relating to protection against overcurrent as mentioned in litera c, including protection against overloads and short circuits, entails that provision shall be made for automatic and selective disconnection of consumers that cause such overcurrent before it reaches a dangerous level, or that the overcurrent is limited in some other way so that it does not represent a danger.

The requirement relating to protection against fault currents as mentioned in litera d, entails that other conductors than live conductors and any other part that is intended to lead a fault current resulting from isolation failure or error, shall be able to conduct this fault current without reaching too high a temperature. Particular consideration should be given to the installation's potential earth fault currents and leakage currents.

The requirement relating to protection against overvoltage as mentioned in litera e, means that suitable protection shall be used to safeguard against hazard and accident incidents resulting from surge caused by isolation failure, faults in voltage regulators or faults between electric circuits with varying voltage, changes in load associated with connecting and disconnecting switches, earth faults and atmospheric overvoltage.

The requirement to protection against undervoltage as mentioned in litera f, means that measures shall be implemented against danger or injury resulting from the voltage returning after a full or partial cut. If such reconnection can entail a hazard, the reconnection should not take place automatically.

The requirement relating to protection against variations in voltage and frequency as mentioned in litera g, entails that the power supply shall be of such a dimension that the voltage and frequency under normal conditions lie within the tolerance limits that the installation and connected equipment are intended for.

The requirement relating to protection against power supply failure as mentioned in litera h, entails that measures shall be implemented to ensure satisfactory and reliable power supply, cf. Section 38.

The requirement relating to protection against ignition of explosive gas atmosphere as mentioned in litera i, entails that electrical equipment shall be located in unclassified areas insofar as practicable. For requirements related to area classification and plants, systems and equipment for use in areas with explosion hazard, see Sections 5 and 10.

The requirement relating to electromagnetic interference as mentioned in litera j, entails that electrical installations and equipment shall function in a satisfactory manner in their electromagnetic environment without causing unacceptable electromagnetic interference for other equipment in this environment. As regards requirements related to electrical equipment, see Sections 77 and 78.

Protection against health injury as a result of electromagnetic fields as mentioned in litera k, is in particular regulated in the Section 26 of the Radiation Protection Regulations (in Norwegian only).

For the design of electrical installations, the IEC 61892 series, including corrigendum 1 to IEC 61892-2 (2012), should be used. In those cases where the IEC 61892 series is not applicable, relevant parts of the IEC 60092 series and Regulations relating to electrical power installations (in Norwegian only) should be used.

For electrical installations on mobile facilities that are not production facilities and that are registered in a national ships' register, the DNV OS-D201 standard may be used as an alternative.

CHAPTER VIII
DRILLING AND WELL SYSTEMS

Re Section 48
Well barriers

The well’s life span as mentioned in the first subsection, means time in use and time subsequent to permanent plugging and abandonment.

In order to fulfil the requirement regarding well barriers, the NORSOK D-010 standard Chapters 4, 5, 9 and 15 should be used in the area of health, working environment and safety. See also Section 5 of the Management Regulations and Section 8 of these regulations.

The requirements in the first subsection also entail that the barriers shall be designed so that unintended outflow of injected material is prevented.

The requirement as mentioned in the second subsection means that it should be assessed whether to insert casings for drilling in zones which may contain hydrocarbons. Robust well design and the potential for regaining well control in the event of an uncontrolled blowout should be given special assessment.

Verification of the performance of well barriers as mentioned in the final subsection, can be based on pressure testing, testing of accessibility, response time and leakage rates, as well as observation of physical properties.

The requirement regarding sufficient independence among the barriers as mentioned in Section 5 of the Management Regulations, entails that well barriers shall be independent, without common well barrier elements, also when the barriers have a common outflow source. One of the barriers may be drilling and well fluids.

With regard to the requirement for dimensioning of binding agents, plugs and seals, particularly in relation to the reduction in strength that can arise over time, see Section 11.

Re Section 49
Well control equipment

In order to fulfil the requirement relating to design of well control equipment as mentioned in the first subsection, the NORSOK D-001 standard Chapters 5 and 6 should be used.

In order to fulfil the requirement relating to equipment as mentioned in the first subsection, second sentence, the NORSOK D-010 standard Chapter 5.7.2 and NORSOK D-001 Chapters 5 and 6 and Appendices A, B and C should be used for diverter lines, with the following addition: for dynamically positioned facilities that drill top hole sections, a straight pipeline can be used, but without valve outlets and with an inner diameter of at least 400 mm (16”).

In the event of well interventions as mentioned in the third subsection, including cable, coiled tubing and snubbing activities through the christmas tree, drill pipe or casing that has not been set, the NORSOK D-002 standard should be used.

An alternative system for activation as mentioned in the fourth subsection, means a system that is acoustically operated, ROV-operated or remote-controlled in some other way.

The shear ram should have the capacity to cut the work string, with the exception of collars and bottomhole string components. All outlets for the blowout preventer's circulation lines should be equipped with two closing arrangements as close to the outlet as possible.

For mobile facilities that are registered in a national ships' register, DNVGL-OS-E101 Chapter 2, Section 5, Paragraph 3 may be used as an alternative to NORSOK D-001.

Re Section 50
Compensator and disconnection systems

To fulfil the requirement for compensator and disconnection systems as mentioned in the first and second subsections, the NORSOK D-001 standard Chapters 5 and 6 should be used, with the following additions:

a) for anchored drilling facilities it should be possible to move quickly off the drilling location in case of a critical situation,
b) for interventions on seabed wells with high pressure risers, the valve and disconnection system should consist of
    a) a remote-operated valve located under the release point, which cuts all objects that penetrate the well barriers and maintains full working pressure after cutting,
    b) a remote-operated main valve that closes after the cutting is completed,
    c) a block valve over the release point which prevents blowout from the riser to the sea,
    d) a vent valve that releases shut-in pressure between the casing ram and the shear ram or block valve prior to release.

For requirements relating to specific analyses to detect accident and hazard situations, reference is made to Section 17 of the Management Regulations. For general requirements related to dimensioning of compensator and disconnection systems as regards loads/actions, see Section 11. The following should be taken into account when stipulating limitations for drilling equipment:

a) movements of the facility as a result of resonance between the wave frequency and the frequency of the facility itself,
b) movement of the facility as a result of loss of position because of anchor line breakage or drift,
c) loads/actions on well and wellhead from pull in riser,
d) margin due to uncertainty in calculated riser design,
e) risk of unintended locking of compensator with ensuing tensile stresses exceeding the dimensioning loads/effects that can occur in the course of well testing and well intervention.

For mobile facilities that are registered in a national ships' register, DNVGL-OS-E101 Chapter 2, Section 5, Paragraph 4 may be used as an alternative.

Re Section 51
Drilling fluid system

Drilling fluid systems mean complete systems with sufficient capacity to mix, store, pump, recondition and cover the need for a fluid-based well barrier. The drilling fluid system area should be designed to avoid harmful exposure for personnel and the environment. The system should be connected to monitoring systems to ascertain the condition of the fluid, system and well.

The system should be adapted to normal operations and emergency situations.

For general requirements related to design of chemical plants, see Section 15.

In order to fulfil the requirement relating to drilling fluid systems, the NORSOK D-001 standard Chapters 5 and 6 should be used in the area of health, working environment and safety, with the following additions:

a) return of the drilling fluid from the well should take place in a closed system to avoid evaporation,
b) the system for monitoring drilling fluid volume should compensate for the facility's movements and should include indicators on the drill floor with audio and visual alarms. When drilling wells with high pressure and high temperature, the need for temperature and pressure sensors in critical locations such as before and after the choke manifold and in the blowout preventer, should be assessed. For general requirements related to drilling fluid parameter monitoring instruments, see Section 17,
c) gases from the reconditioning unit should be vented through separate pipes to a safe area.

For general requirements related to barriers, see the Section 5 of the Management Regulations and Section 8 of these regulations.

For mobile facilities that are registered in a national ships' register, DNVGL-OS-E101 Chapter 2, Section 5, Paragraph 7 may be used as an alternative.

Re Section 52
Cementing unit

For general requirements related to design of chemical plants, see Section 15.

In order to fulfil the requirement regarding cementing units, the NORSOK D-001 standard Chapters 5 and 6 and Appendices A, B and C should be used in the area of health, working environment and safety, with the following additions: the cementing unit and the cementing head should be designed for remote operation.

For mobile facilities that are registered in a national ships' register, DNVGL-OS-E101 Chapter 2, Section 5, Paragraph 7.4 may be used as an alternative.

Re Section 53
Equipment for completion and well flow

In order to fulfil requirements relating to equipment for completion and testing of wells, the NORSOK D-010 standard Chapters 6, 7, 8, 14 and 15 and D-007 should be used in the area of health, working environment and safety.

Design to handle controlled well flow as mentioned in the first subsection, means

a) equipment used for production and injection of gas, fluids and solids,
b) need for equipment in case of changes in preconditions, for instance, failure of barrier elements,

The equipment should be designed for well intervention, workover and plugging of wells and for collection of well data of significance to safety.

Well testing as mentioned in the third subsection, means flow during formation testing, test production, clean-up and stimulation of the well.

See the Resource Management Regulations (in Norwegian only) on formation strength testing.

For mobile facilities that are registered in a national ships' register, DNVGL-OS-E101 Chapter 2, Section 5, Paragraph 9 may be used as an alternative.

Re Section 54
Christmas tree and wellhead

The equipment as mentioned in the first subsection, also encompasses casing hangers and annular preventers. To fulfil the requirements in the section, the standards NORSOK D-010 Chapters 7.7.2, 8 and 15, NORSOK U-001, ISO 10423 and ISO 13628 should be used, with the following additions:

a) annulus should have pressure monitoring,
b) the main valves as mentioned in the second subsection, should be integrated in, or mounted directly on, the christmas tree. It should be possible to close inlets and outlets in the christmas tree that can be subjected to well pressure in at least two independent ways. Injection points should have check valves as close to the injection point as possible,
c) it should be possible to isolate wellhead christmas trees to avoid unintended closing of valves during well intervention,

d) the closing time for valves in the main barrel and side outlets of the seabed christmas trees should be assessed in relation to the barrier function of the valves. This evaluation should include necessary closing time in relation to the risk-reducing function and the location of the valve.

For general requirements relating to barriers, see Section 5 of the Management Regulations. See also Sections 8 and 33 of these regulations and Section 47 of the Activities Regulations.

CHAPTER IX
PRODUCTION PLANTS

Re Section 55
Production facility

For design of production facilities as mentioned in the first subsection, the standards NORSOK P-002, L-001 and L-002 should be used in the area of health, working environment and safety.

In cases involving subsea production facilities, the standards NORSOK U-001 and ISO 13628 should be used in the area health, working environment and safety.

For subsea production facilities, the pollution requirement as mentioned in the first subsection, means that the responsible party shall evaluate whether hydraulic fluids, well fluids and other chemicals shall be routed back to the surface or to a local storage tank.

The requirement relating to design as mentioned in the first subsection, shall be seen in the context of Chapter II of the Framework Regulations.

For general requirements related to design of chemical plants, see Section 15.

For protection of subsea production facilities against mechanical damage, see Section 45 of the Framework Regulations.

For general requirements related to design, see Sections 5 and 10.

CHAPTER X
LOAD-BEARING STRUCTURES AND PIPELINE SYSTEMS

Re Section 56
Load-bearing structures and maritime systems

The standard NORSOK N-001 should be used to fulfil the requirements.

For verification of load-bearing structures as mentioned in the first subsection, the NORSOK N-001 standard Chapter 5.2 should be used.

Location-specific analyses of mobile jack-up facilities should be carried out in accordance with DNVGL-OS-C104.

As regards water breakthrough in floating facilities, see Sections 39 and 62. For general provisions, see Sections 5 and 7.

For design of tension legs the standards NORSOK N-001 and N-004 Annex N should be used.

It should also be assessed whether firefighting water from the facility’s sprinkler system or from a vessel may produce unintended changes to weight or stability.

Re Section 57
Pipeline systems

It should be possible to take a reading of the pressure in the launchers and receivers as mentioned in the second subsection, both before start-up and during operation.

In order to fulfil the requirement for safety level as mentioned in the third subsection, the failure likelihoods in the standards DNV OS-F101 and OS-F201, Paragraph 2, Table 2-5, should be used.

For general requirements related to design, see Sections 5, 10, 12 and 15.

CHAPTER XI
LIVING QUARTERS

Re Section 58
Living quarters

In order to fulfil the requirements relating to living quarters as mentioned in the first subsection, the standards NORSOK C-001, C-002, S-001 and S-002 should be used with the following additions:

a) the capacity requirement as mentioned in the first subsection, means that the living quarters shall be dimensioned with sufficient margins to avoid bed scarcity during peak manning levels and so that there is no need for two persons to share an individual cabin unless the conditions in Section 19 of the Activities Regulations concerning accommodation and cabin sharing are fulfilled,
b) the living quarters should be designed so that personnel can sleep undisturbed and be assured of satisfactory restitution.

For mobile facilities that are registered in a national ships' register, Sections 6, 7, 8, 12, 13, 14, 15, 17 and 18 of the Norwegian Maritime Authority's Regulations relating to construction and setup of the living quarters on mobile facilities can be used as alternatives to the standards NORSOK C-001 and C-002 in the areas covered by the Norwegian Maritime Authority's regulations, with the following addition:

a) the additions mentioned in the first paragraph,
b) bunk beds should be replaced by beds on the floor, cf. Section 20.

The requirements as mentioned in the first subsection, also apply to simpler facilities with accommodation, but consideration can be given to whether

a) the dining hall should be included in the total recreation area,
b) adaptation of kitchen and washing-up areas should be in proportion to the need on the facility,
c) the laundry room can be omitted,
d) the dedicated health department can be omitted.

If a dedicated health department is omitted, there should be adequate area and equipment on the facility to cover the need for first aid until the helicopter arrives.

The standard of hygiene as mentioned in the second subsection, should particularly be maintained in cabins, day rooms, the health department and areas where food is stored, prepared and served, cf. Section 61 and Section 14 of the Activities Regulations.

For facilities where no permanent manning is planned, consideration should be given to whether living quarters or emergency quarters should be built. These evaluations should at least include

a) anticipated scope of work and work organisation,
b) risk related to transport and stay on the facility,
c) working environment aspects,
d) need for restitution and rest,
e) hygienic conditions.

Re Section 59
Health department

If facilities are connected by gangways, the requirement as mentioned in the first subsection, entails that at least one of the facilities shall have a health department.

In order to fulfil the health department requirements as mentioned in the first subsection, the NORSOK standard C-001 Chapter 7.21 should be used, with the following addition: the health department should be located with the least possible exposure to noise and vibrations, and such that stretcher transport to the health department of sick or injured personnel can be accomplished in a prudent manner. For mobile facilities that are registered in a national ships' register, Section 16 of the Norwegian Maritime Authority’s regulations relating to construction and outfitting of the living quarters on mobile facilities may be used as an alternative to the NORSOK standard C-001, with the same additions as mentioned in the second subsection.

The health department's equipment should be assessed on the basis of the defined accident and hazard situations as mentioned in Section 17 of the Management Regulations.

Equipment as mentioned in the second subsection, includes medication and first aid equipment, stretchers and medical rescue equipment.

Re Section 60
Emergency sickbay

The emergency unit will normally be a room that has another primary function, but that can quickly be converted into an emergency sickbay if necessary.

In order to fulfil the requirements relating to the emergency sickbay, the NORSOK standard C-001 Chapter 7.21 should be used.

Re Section 61
Supply of food and drinking water

The requirement regarding design as mentioned in the second subsection, entails that technical solutions for food and drinking water supply shall satisfy the provisions in the Food Regulations, as well as the Regulations relating to water supply and drinking water (in Norwegian only). In addition, the technical solutions should be based on recognised methods to the extent possible.

Reference is also made to Section 13 of the Activities Regulations.

Furthermore, reference is made to NORSOK P-002 Chapter 27. The Norwegian Institute of Public Health's guideline material for design and operation of drinking water systems details the regulatory requirements for drinking water systems and drinking water supply offshore. The guideline material is available in Norwegian and English at www.fhi.no/offshore.

Following delegation of authority from the Norwegian Food Safety Authority, the County Governor of Rogaland supervises compliance with the provision relating to food, water supply and drinking water in the petroleum activities.

CHAPTER XII
MARITIME FACILITIES

Re Section 62
Stability

To fulfil the requirements to buoyancy and stability as mentioned in the first subsection, Section 8 up to and including Section 51 of the Norwegian Maritime Authority's Regulations relating to stability, watertight subdivision and watertight/weathertight closing means on mobile facilities (in Norwegian only) should be used. Moreover, the dimensioning extent of the damage should be based on an assessment of possible fault modes.

For design of facilities as regards stability, the NORSOK N-001 standard Chapter 7.10 should be used.

For requirements regarding the design of ballast systems, see Section 39.

Re Section 63
Anchoring and positioning

Tension legs are load-bearing structures comprised by Section 56.

For general requirements related to loads/actions, load/action effects and resistance, see Section 11.

To fulfil the requirements to anchoring and positioning Section 6 up to and including Section 17 of the Norwegian Maritime Authority's Regulations relating to positioning and anchoring systems on mobile facilities (the anchoring regulations 09) (in Norwegian only) should be used. In addition, the NORSOK N-001 standard Chapters 7.11 and 7.12 should be used.

For design of dynamic positioning systems as mentioned in the last subsection, the technical provisions in the IMO MSC/Circular 645 standard should be used.

For requirements related to disconnection of risers, see Section 50.

Re Section 64
Turrets

For design of turrets, the NORSOK S-001 standard Chapter 5.4.8.2 should be used in addition.

CHAPTER XIII
DIVING FACILITIES

Re Section 65
Facilities and equipment for manned underwater operations

For design of plants and equipment for manned underwater operations on vessels, see Section 1.

For general requirements related to design of plants, systems and equipment for manned underwater operations, see Section 10.

CHAPTER XIV
ADDITIONAL PROVISIONS

Re Section 66
Loading and offloading systems

Hose connections in loading and unloading facilities should be of the quick-release, self-closing type in the event of overloads.

Loading hoses for loading and unloading from supply vessels should be equipped with floats.

In order to fulfil the requirement relating to design of loading and unloading facilities on floating production, storage and offloading facilities (FPSOs) and floating storage units (FSOs and FSUs), DNV-OS-E201 Chapter 2 Section 12, and Section 35 of the Norwegian Maritime Authority's Regulations relating to mobile offshore facilities with production technical plants and equipment should be used.

The design of the stern on FPSOs, FSOs and FSUs should conform to the NORSOK N-001 standard.

Re Section 67
Waste

No comments.

Re Section 68
Exhaust ducts

In order to fulfil the requirement for exhaust ducts as mentioned in the first subsection, the NORSOK S-001 standard should be used with the following additions:

a) exhaust ducts should be designed so that the exhaust gases are routed to unclassified areas,
b) if water-cooled spark catchers are used, a signal should sound in the central control room in the event of a failure in the water supply.

With regard to exhaust ducts from reconditioning plants in drilling fluid systems, see Section 51.

Re Section 69
Lifting appliances and lifting gear

For the design and selection of lifting appliances and lifting gear for use on permanently placed and mobile facilities NORSOK R-002 standard should be used.

With regard to evaluation of the technical condition of cranes on mobile facilities built before 2007, reference is made to the Norwegian Shipowners' Association's Guidelines for implementation of EN 13852-1 on existing offshore cranes on mobile offshore units.

In order to fulfil the requirement regarding remote operation as mentioned in the third subsection, the NORSOK D-001 standard Chapters 5 and 6 and Norwegian Oil and Gas' Guideline No. 081 should be used, with the following addition: lifting equipment should have independent safety features and be suspended and stored in such a way that the equipment is secure in the event of heeling, and that the danger of falling objects is limited.

Snubbing units as mentioned in the last subsection, means mobile units that are installed so that forces are transferred directly to the wellhead. For snubbing units, the requirement will be made applicable to the extent that equipment to be used with such units, has been developed and tested.

For lifting appliances and lifting gear on the drill floor, Annex D of the NORSOK R-002 standard should be used.

In addition, reference is made to Section 80 since lifting appliances and lifting gear are also comprised by separate regulation in the Machinery regulations, complete with supplementary standards.

Re Section 70
Helicopter deck

In order to fulfil the requirement relating to helicopter decks as mentioned in the first subsection, the NORSOK C-004 standard, with exception of Chapter 14 on the minimum size of helicopter decks, may be used as an addition to the requirements in the regulations of the Civil Aviation Authority.

The standard NORSOK S-001 Chapter 20.4.9 should be used in the design of helicopter decks, with exception of the specified response time for extinguishing agent and with the following addition:

for facilities with particular problems related to take-off and landing, such problems should be taken into account when designing and placing the helicopter deck.

Re Section 71
Marking of facilities

In agreement with the Norwegian Coastal Administration, the following provisions shall be used for marking of facilities as mentioned in the first subsection: *Provisions on the marking of permanently located offshore units in the petroleum industry*.

For requirements relating to marking of mobile facilities that are registered in a national ships' register, reference is made to Section 1 of the Framework Regulations relating to application of maritime legislation in the offshore petroleum activities.

Re Section 72
Marking of equipment and cargo

No comments.

Re Section 73
Lifts

In order to fulfil the requirement relating to lifts, the NORSOK R-002 standard Appendix E should be used.

CHAPTER XV
IMPLEMENTATION OF EEA REGULATIONS

Re Section 74
Simple pressure vessels

This section continues the previous incorporation in the petroleum activities of Council Directive 87/404/EEC relating to simple pressure vessels.

Re Section 75
Personal protective equipment

This section continues the previous incorporation in the petroleum activities of Council Directive 89/686/EEC relating to personal protective equipment. In addition, the changes made in Council Directive 93/95/EEC, have been incorporated.

When lifting personnel by means of load carriers, the NORSOK R-002 standard Appendix C 18 should be used.

Re Section 76
Aerosol containers

This section continues the previous incorporation in the petroleum activities of Council Directive 75/364/EEC relating to aerosols, as well as the adopted changes in Commission Directive 94/1/EEC.

Re Section 77
EMC

This section continues the previous incorporation in the petroleum activities of Council Directive 89/336/EEC, 92/31/EEC and 2004/108/EC (electromagnetic compatibility – EMC).

Re Section 78
ATEX

This section continues the previous incorporation in the petroleum activities of Council Directive 94/9/EU relating to equipment and safety systems for use in areas where there is a risk of explosion (ATEX).

Re Section 79
Pressure equipment that is not covered by the Facilities Regulations

The purpose of this section is to clarify the relationship to the Regulations relating to pressure equipment (in Norwegian only) (FTPU).

In those cases where the FTPU do not apply, relevant parts of the Facilities Regulations will apply.

Re Section 80
Products that are not covered by the Facilities Regulations

The purpose of this section is to clarify the relationship to the Machinery Regulations.

The Machinery Regulations (in Norwegian only) have limited application in the petroleum activities and do not comprise seagoing vessels and mobile facilities together with machinery on board such vessels or facilities, cf. Section 1, No. 2 litera f of the Machinery Regulations.

Seagoing vessels and mobile offshore facilities such as, for example, mobile drilling facilities, and machinery installed on them are excluded from the scope of the Machinery Directive by Article 1 (2) (f) since they are subject to the Conventions of the International Maritime Organisation.

Some of the equipment concerned by this exclusion may also be subject to the Marine Equipment Directive 96/98/EC18 as amended by Directive 2002/75/EC19.

A mobile offshore facility is an offshore facility that is not intended to be located on the oil field permanently or for the long term, but is designed to be moved from location to location, whether or not it has a means of propulsion or of lowering legs to the seafloor.

However, floating facilities intended for production, such as, for example, FPSOs (Floating Production, Storage and Offloading installations - usually based on tanker designs) and FPPs (Floating Production Platforms - based on semi-submersible vessels) and the machinery installed on such units are not excluded from the scope of the Machinery Directive.

Machinery intended to be installed on fixed offshore facilities such as, for example, oil production facilities, and machinery which may be used on both fixed and mobile offshore facilities, is also subject to the Machinery Directive. Sections 1 and 2 of the Machinery Regulations stipulate the scope of the regulations and which equipment is covered by the Machinery Regulations. In those cases where the Machinery Regulations do not apply, relevant parts of the Facilities Regulations will apply.

CHAPTER XVI
CONCLUDING PROVISIONS

Re Section 81
Supervision, decisions, enforcement, etc.

No comments.

Re Section 82
Entry into force

Within the scope of the Pollution Control Act (in Norwegian only), the complete Facilities Regulations enter into force on 1 January 2002. This also applies to existing facilities. This entails that an assessment has to be made of existing facilities to determine whether the facility fulfils the requirements of the regulations. This applies in particular to the requirements in Sections 15, 40, 48, 51, 52, 66 and 69 of the regulations. If the facility does not fulfil the requirements of the regulations, changes shall be made to the facility. If particular reasons so warrant, the Norwegian Environment Agency can grant exemptions from requirements in the regulations. This could, for example, be instances where the costs of making changes substantially exceed the environmental gain. It is not anticipated that the regulations' requirements regarding taking into account the external environment, will entail major or costly changes to existing facilities. In many of the requirements, provision is made for making a cost-benefit assessment in relation to deciding whether the regulatory requirements are fulfilled or not. This applies to e.g. Section 40.

Sections 4, 5, 6, 10 and 12 state that consideration shall be given to the risk of pollution or environmental risk when selecting materials and when choosing and designing facilities and plants. These provisions will be of significance in the planning and design phase, and when modifying plants and facilities. These sections do not require, however, that changes are made to existing plants and facilities.

This Section No. 2, viewed in context with Section 73 of the Framework Regulations, entails that, in the area of health, working environment and safety, it is the technical requirements in the regulations that applied up to the date when these regulations entered into force, that can still be used as a basis.

Major modifications as mentioned in this Section No. 3, may be the installation of a new module, major interventions in hydrocarbon-carrying systems or major changes in physical barriers. With regard to the use of new standards in such contexts, see the Framework Regulations Section 24.

Existing facilities as mentioned in this Section, means facilities where the plan for development and operation of petroleum deposits (PDO) has been approved in accordance with Section 4-2 of the Petroleum Act, or where special permission has been given on the basis of plans for installation and operation of facilities for transport and exploitation of petroleum (PIO) in accordance with the Petroleum Act Section 4-3, or facilities that have been granted consent to carry out petroleum activities before these regulations entered into force.

New vessels, as mentioned in subsection 5, means units contracted for (build contract signed) after 23 December 2016.

For mobile facilities that are registered in a national ships' register, the requirements in the new regulations will apply when a new consent is applied for, see Section 73 of the Framework Regulations. It follows from Section 26 of the Management Regulations that the operator shall provide an overview of previously granted exemptions for mobile facilities in applications for consent. Previously granted exemptions follow the mobile facility. New operators shall, however, evaluate whether it is prudent to operate with the exemptions granted, and whether changed conditions exist that make it necessary to apply for a new exemption, see Section 70 of the Framework Regulations.

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