GUIDELINES REGARDING THE MANAGEMENT REGULATIONS

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Petroleum Safety Authority Norway
Norwegian Environment Agency
Norwegian Directorate of Health

PETROLEUM SAFETY AUTHORITY
NORWAY

Guidelines regarding the management regulations

CHAPTER I
INTRODUCTORY PROVISIONS

Re Section 1
Scope

The scope of these regulations is the same as the scope of the Framework Regulations, and covers offshore petroleum activities with exceptions as mentioned in Section 4 of the Framework Regulations, as well as onshore facilities as defined in Section 6 of the Framework Regulations.

Re Section 2
Responsibilities

No comments.

Re Section 3
Definitions

No comments.

CHAPTER II
RISK MANAGEMENT

Re Section 4
Risk reduction

When choosing technical, operational and organisational solutions as mentioned in the first subsection, the responsible party should apply principles that provide good, inherent health, safety and environment qualities.

Hazard and accident situations as mentioned in the first subsection, are a collective term covering both near-accidents and accidents that have occurred, as well as other undesirable conditions that can lead to injury or damage, cf. Section 11 of the Framework Regulations regarding risk reduction principles.

Offshore petroleum activities

See also the ISO 17776 standard, Chapter 5.4.1 and Appendix A.

Results from environmental risk analyses, cf. Sections 16 and 17 of the Management Regulations, should be included in the basis for choice of solutions to reduce risk.

Risk reduction measures that should be considered, are conducting the activity in periods of the year with the lowest environmental risk and choosing a design that reduces the extent of pollution, e.g. blowout rates.

Re Section 5
Barriers

Barriers as mentioned in the first subsection, means technical, operational and organisational elements on an offshore or onshore facility, that, individually or collectively, reduce the possibility of concrete failures, hazard and accident situations occurring, or that limit or prevent harm/inconveniences. Barriers are intended either to prevent a concrete chain of events from occurring or to affect a chain of events in a way that limits harm and/or losses. Barriers fulfil their functions in case of failures, hazard and accident situations on an offshore or onshore facility, be it a case of potential harm done to people, the external environment and/or financial assets. Barriers can, as such, be measures to prevent, stop and/or limit the spread of acute pollution, but can also comprise various emergency preparedness measures, cf. the Petroleum Act Section 9-

2, the Pollution Act Section 40 (in Norwegian only) and the Act relating to health and social preparedness Section 1-2 (in Norwegian only).

The requirement for independence as mentioned in the second subsection, entails that it should not be possible for multiple important barriers to be impaired or malfunction simultaneously, e.g. as a result of a single fault or a single incident.

The strategies and principles as mentioned in the third subsection, should be broken down to a convenient level, e.g. area level on the individual offshore or onshore facility, and designed so that they contribute to provide relevant personnel with a common understanding of the basis for the requirements for the individual barriers See also standards NS-EN ISO 17776 Chapter 5.4.2 and NS-EN ISO 13702 Chapter 5. The transition between strategy and established performance requirements should be clear and apparent.

Barrier elements as mentioned in the fourth subsection, mean technical, operational or organisational measures which form part of the realisation of a barrier function.

Technical barrier elements mean equipment and systems that are included in the realisation of a barrier function.

Organisational barrier elements mean personnel with defined roles or functions and specific competence that are included in the realisation of a barrier function.

Operational barrier elements mean the actions or activities the personnel must take/perform to realise a barrier function.

Barrier function as mentioned in the fourth subsection, means the task or role of a barrier. Examples of barrier functions are those preventing leaks, preventing ignition, reducing fire loads, ensuring safe evacuation and preventing detrimental hearing .

Performance as mentioned in the fourth subsection, means verifiable requirements to, inter alia, capacity, reliability, accessibility, efficiency, ability to withstand loads, integrity and robustness.

For safety systems, standard such as IEC 61508, IEC 61511, IEC 62061 and ISO 13849 should be used as a basis. In addition, Norwegian Oil and Gas' Guideline 070 should be used as a basis for offshore petroleum activities.

Requirements to barriers in the form of emergency preparedness against acute pollution meant to limit possible harm or negative consequences to the environment caused by the pollution, are stipulated pursuant to Section 40 of the Pollution Control Act (in Norwegian only).

Barriers to limit possible damage or negative consequences to the environment in case of acute pollution offshore as mentioned in the third subsection, shall be sufficiently robust to be able to handle the broadest possible spectrum of weather conditions. The requirements to risk reduction, cf. Section 11 of the Framework Regulations and Section 4 of the Management Regulations, and to continuous improvement, cf. Section 6 of the Management Regulations, entail that the operators have a responsibility to contribute to a further development of the emergency preparedness in order to handle different situations. The barriers should be sufficiently robust so that a technical failure in individual elements of a barrier, does not result in a technical failure in the next barrier.

Performance requirements to barriers to limit possible damage or negative consequences to the environment in case of acute pollution offshore, should express functionality, be easy to understand, be concrete and measurable and realistic (NORSOK Z-013). They should, inter alia, be based on results from environmental risk and emergency preparedness analyses, cf. Sections 16 and 17 of the Management Regulations.

Performance requirements to emergency preparedness mean, primarily, necessary capacity and response time for relevant emergency preparedness measures. They can also be goals for the protection of vulnerable environmental values, competence of personnel and persistence in actions against acute pollution. The performance requirements should cover all phases of emergency preparedness and be specified so that they allow relevant indicators to be evaluated and used. Availability of emergency preparedness resources should not be a limiting factor for this assessment.

More detailed requirements to establishment of barriers against acute pollution are given in Section 73 of the Activities Regulations.

Re Section 6

Management of health, safety and the environment

The management of health, safety and the environment as mentioned in the first subsection, is one aspect of the management of the various activities and can therefore be integrated in their management.

Thus, the requirement does not necessarily entail the establishment of a separate management system for health, safety and environment.

The management activities include

a) setting goals, strategies and requirements,
b) planning and execution,
c) handling nonconformities,
d) measurement and assessment,
e) further development and improvement,

See also the NS-EN-ISO 9004 standard.

The requirement for unambiguous definition of responsibility and authority as mentioned in the second subsection, applies for all forms of transfer of responsibility and authority, such as in connection with organisational changes or the transition from one phase to the next. The requirement for coordination entails e.g. that the responsible party also has sufficient opportunity to influence decisions within its area of responsibility. This is particularly important as regards the responsibility for safety-critical equipment and activities.

The requirement for preparing necessary governing documents as mentioned in the third subsection entails that the internal requirements for scope, contents and updating of documents shall be adapted to the responsible party's needs.

CHAPTER III
OBJECTIVES, INTERNAL REQUIREMENTS AND THE BASIS FOR MAKING DECISIONS

Re Section 7
Objectives and strategies

The requirement for further development as mentioned in the first subsection, entails a responsibility to set higher goals in accordance with the degree of goal achievement.

Agreement between goals as mentioned in the second subsection, means that the goals are consistent and not contradictory.

Re Section 8
Internal requirements

No comments.

Re Section 9
Acceptance criteria for major accident risk and environmental risk

The acceptance criteria that the party responsible sets for the design of a facility, has great significance for that the acceptance criteria can be met in the operational phase. Hence, both the party responsible for operating a mobile facility and the operator shall set acceptance criteria in areas under their responsibility.

Acceptance criteria as mentioned in the first subsection, shall express and represent an upper limit for what is considered an acceptable risk level for the various categories mentioned in literas a to d. As ensues from Section 11 of the Framework Regulations, complying with health, safety and environmental legislation constitutes an important parameter for this upper limit and it is accordingly not permitted to set aside specific requirements in the health, safety and environmental legislation in respect of risk calculation. Additional risk reduction shall always be considered, even if the results of risk analyses or risk assessments indicate a level of risk that is within the acceptance criteria, cf. Section 11 of the Framework Regulations.

The acceptance criteria shall be formulated so that they are in accordance with the requirement for suitable risk and preparedness analyses, cf. Section 17, and are suitable for providing decision-making support in relation to the risk analyses and risk assessments carried out.

Major accident means an acute incident such as a major spill, fire or explosion that immediately or subsequently entails multiple serious personal injuries and/or loss of human lives, serious harm to the environment and/or loss of major financial assets.

Acceptance criteria for acute pollution shall include the risk of acute pollution to occur (the area of authority of the Petroleum Safety Authority Norway) as well as the risk of harm to the external environment/environmental risk (the area of authority of the Norwegian Environment Agency).

Offshore petroleum activities

See Annex A of the NORSOK Z-013 standard for a description of different types of acceptance criteria that may be used for major accident risk and environmental risk as mentioned in subsection 2 literas a, c and d. See Annex B Chapter 4 of the standard for a complementary description of the acceptance criteria for loss of main safety functions as mentioned in subsection 2 litera b, cf. Section 11 of the Facilities Regulations.

The operators that have facilities and activities in the same area, should cooperate on principles for establishing acceptance criteria, so that they are in a comparable form among operators, and so that they form a suitable basis for e.g. establishing joint emergency preparedness, cf. Section 21 of the Framework Regulations.

Re Section 10
Measurement parameters and indicators

The measurement parameters as indicated in the first subsection, and the indicators as mentioned in the second subsection, are used in the work to monitor and assess the risk level. Key measurement parameters and indicators as regards the risk level, are identified on the basis of risk assessments.

The requirement in the second subsection includes indicators to monitor key factors that influence risk. The indicators should be both proactive and reactive, and reflect technical, organisational and human factors.

Re Section 11
Basis for making decisions and decision criteria

Comprehensively and adequately considered as mentioned in the first subsection, means e.g. that reports, data and analyses included in the basis for decisions, are of the necessary quality, that different alternatives and consequences have been studied, and that relevant experts and user groups have been involved.

CHAPTER IV
RESOURCES AND PROCESSES

Re Section 12
Planning

The plans as mentioned in the first subsection, can be plans where health, safety and environment are integral parts, or plans for own health, safety and environment activities. Examples of plans where health, safety and environment are an integrated part, include plans for maintenance or operations.

The resources mentioned in the second subsection, can include infrastructure, personnel and information.

Re Section 13
Work processes

Work processes means a set of interrelated or interacting activities that use inputs to deliver an intended result, see also the NS-EN-ISO 9000 standard, Chapter 3.4.1 and Chapter 2.3.4. Work processes can include engineering processes, drilling, operations and maintenance processes, and change or improvement processes.

The individual work process mentioned in the first subsection, should be formulated according to the quality loop model, see also the NS-EN ISO 9004 standard, Chapter 7 and Annex B of the standard.

The requirement in the second subsection entails that the health, environment and safety consequences of the interaction between humans, technology and organisation are subjected to systematic evaluation when establishing, implementing and developing work processes.

The description mentioned in the third subsection, should cover the individual activities, their order, as well as the input factors and the products. The description of process interfaces should include sequences and dependencies.

Re Section 14
Manning and competence

Competence as mentioned in the first subsection, includes both individual competence and group competence, including professional competence, systemic knowledge, and health, safety and environment competence, see also Section 21 of the Activities Regulations and Section 50 of the Technical and Operational Regulations.

The requirement for manning and competence applies both to project and operations organisations, and entails that manning shall be sufficient to safeguard e.g. activity peaks, operational interruptions and hazard and accident situations. The manning shall also be sufficient to cover absence, including absence due to illness, absence of key personnel, and absence as a consequence of tasks carried out by the elected safety delegate service, cf. the Regulations of 6 December 2011 relating to organisation, management and participation.

When stipulating the minimum requirement as mentioned in the second subsection, consideration should be given e.g. to the need for mutual transfer of experience, consultation, review and relief.

Incompatible tasks as mentioned in the third subsection, can be tasks that shall be carried out at the same time as there is an operational interruption, or a hazard and accident situation.

The requirement to review consequences as mentioned in the fifth subsection, applies e.g. in connection with changes in work form and distribution of tasks, including between the onshore and offshore organisations, or in connection with stipulating manning in new or renegotiated contracts with contractors, cf. Section 18 of the Framework Regulations.

Re Section 15
Information

There are also requirements to information intended for employees in the Regulations relating to conduct of work (RCW) (in Norwegian only). They relate to

- work with chemicals, cf. RCW chapter 3, with the exception of sections 3-23, 3-24 and 3-27 as far as offshore petroleum activities are concerned,
- exposure to factors detrimental to reproduction, cf. RWC chapter 7,
- work with work equipment that requires additional carefulness, cf. RCW chapter 10, with the exception of sections 10-1, 10-2 and 10-3,
- work involving risk of being exposed to health detrimental noise or mechanical vibrations, cf. RCW chapter 14, with the exception of sections 14-1 – 14-7 included, and 14-10, all as far as offshore petroleum activities are concerned,
- work involving risk of being exposed to artificial optic radiation, cf. RCW chapter 16,
- safety signs and signalling, cf. RCW chapter 22,
- work imposing ergonomic strain, cf. RCW chapter 23,

Identify as mentioned in the first subsection, means identifying who needs which type of information, and when. The need for information will emerge e.g. from the work processes and interfaces between them, cf. Section 13.

Acquiring as mentioned in the second subsection, includes active searching in internal and external information sources.

Users as mentioned in the second subsection, can be own personnel or external suppliers of services and equipment.

CHAPTER V
ANALYSES

Re Section 16
General requirements for analyses

The term "analyses" is used in a broad sense here. Specific requirements for analyses are stated in the other sections in this chapter, in the Facilities and Activities Regulations, and in the Technical and Operational Regulations.

Recognised methods and models as mentioned in the first subsection, mean the methods and models that have been tested and validated prior to use. Suitable methods and models as mentioned in the first subsection, mean that various models and methods shall be evaluated and selected in relation to the individual analysis' purpose and need for decision support.

The requirement to use recognised and suitable data as mentioned in the first subsection, entails clearly detailing that the data is representative and valid, as well as its limitations.

Target groups as mentioned in the third subsection, means e.g. decision-makers, employees and their elected representative.

The requirement to establish criteria for updating existing analyses or for carrying out new analyses as mentioned in the fourth subsection, apply to changes in or deviations from the purpose, limitations, assumptions and premises used as a basis in existing analyses. The criteria shall be established solely with a view to securing the necessary basis for decisions, as mentioned in the first subsection.

Re Section 17
Risk analyses and emergency preparedness assessments

The NORSOK Z-013 and ISO 31000 standards should be used, amongst others, to fulfil the requirements for risk analyses and emergency preparedness analyses. When performing risk analyses of maritime systems and of stability, the Norwegian Maritime Authority's Regulations relating to risk analyses for mobile facilities (in Norwegian only) should be used in addition.

The NORSOK N-003 standard, Chapter 8.3.2, can be used for analyses of ship collisions.

Offshore petroleum activities

Assessments of environmental risk associated with operational discharges should be performed according to Section 64 of the Activities Regulations.

The purpose of an environmental risk analysis is to identify the environmental values exposed to a risk from a given activity and the magnitude of this. Further, the purpose is to use the results to identify needs for new or additional risk reducing measures.

For environmental risk and emergency preparedness analyses connected to acute pollution for offshore facilities, the following should be included:

General

a) The operator shall perform analyses connected to acute pollution from their own facilities and activities. All facilities (wells, subsea templates, production platforms, pipelines) and activities in the field should be included in the analyses.
b) In case of modifications and considerable changes, these shall be analysed in context to the existing facilities and activities, not as isolated facilities or activities, cf. Section 16 of the Management Regulations.
c) To constitute a sufficient basis for the decision, as mentioned in the first subsection second sentence and Section 16 first subsection, the analyses should be performed for the entire year. This, inter alia, to minimise the risk, as mentioned in Section 11 of the Framework Regulations, by planning activities to the periods with the lowest risk and to consider changes in contingency requirements throughout the year. For activities with drilling time restrictions, the analyses should also include incidents starting up at a time where drilling is permitted, but with a duration exceeding this period.
d) The analyses should include sea surface, water column, seafloor, coast and shoreline, ice edge and icy waters where this is relevant.
e) The analyses shall be updated in case of changes as mentioned in Section 17, last subsection. Changes hereby defined as changes in an activity, input data, and/or tools and methods. The updates of the environmental risk and emergency preparedness analyses should include an assessment of

whether the best available techniques have been applied to reduce the environmental risk. Documentation of the assessments performed should be available for the Norwegian Environment Agency upon request.

For input data (defined as data of environmental values, meteorological and oceanographic data and probability for discharge).

a) The analyses should be based on hazard and accident situations as mentioned in third section item a) that could lead to acute pollution. The selected hazard and accident situations must be appropriate for the analyses to be performed. For the selection of hazard and accident situations, frequencies or probabilities for discharges based on relevant, updated statistics for historical incidents and evaluations of activity-specific conditions should be used. The data sources should be referred to. A distribution of rates and durations reflecting the diversity in possible magnitudes of a potential acute pollution should be presented. The longest duration of a blowout should be the time required for drilling a relief-well, including time for mobilising, magnetic searching and killing of a blowing well. Important assumptions and uncertainties in the calculations of rates and durations should be included.
b) The analyses should be based on the best available meteorological and oceanographic data of wind, temperature and currents. The data should cover a longer period of time up to as close to current date as possible. Further, the data should have a high resolution both in time and space.
c) The analyses shall be based on the type of pollution, including the oil type relevant for the activity. The physical, chemical and ecotoxicological properties of the pollution, including results from characterization of oil and condensate, according to Section 59 of the Activities Regulations, and real data for efficacy of contingency material, according Section 42 of the Facilities Regulations, should be included in the basis for the analysis. If the oil type is unknown, a suitable reference oil may be used. The selection of reference oil should be justified.

For simulations of drift and dispersion (large discharges of oil or condensate, as mentioned in the fifth subsection, is defined as blowout scenarios).

a) Simulations of drift and dispersion should be performed for the selected hazard and accident situations using a statistical representative distribution of the different rates and durations. It should be described how this accounted for in the simulations. Simulations should be performed for the actual discharge location (surface/seafloor).
b) Simulations should be performed for a sufficient number of start-up dates from the statistical wind- and current datasets in a way that the simulations give a representative picture of the different weather situations in the different seasons.
c) The model should be able to treat oil drift in three dimensions, i.e. downmixing into- and spreading with the water masses, in addition to horizontal drift and spreading at the surface over time. In addition, the model should handle the oil's physical and chemical properties and the oil's weathering properties, i.e. evaporation, emulsification, dissolving in water, in addition to natural dispersion and biochemical decomposition in time and space.
d) Effects of acute oil pollution on environmental values in the water column can be calculated based on detailed chemical composition of the oil or based on total hydrocarbon concentration (THC) and dispersed oil in the water column. Degradation and toxicity of the oil components can be important to estimate exposure and damage as correct as possible.

For environmental risk analyses

a) Varying vulnerability in different geographical areas shall be accounted for in the analyses
b) A reference-based analysis may be performed, if updated analyses for a comparable activity in the vicinity, which is based on the best available input data, is available. It should be justified why the environmental risk will be similar or lower than in the reference activity.
c) The analyses should give a brief description of the vulnerability of the selected environmental values, their protection status, fraction of a population and seasonal variations. Further, the selection of the environmental values should be justified and the data source should be referred.
d) The environmental risk analysis should have a description of which functions that are used to calculate the damage and the degree of seriousness of the damage (the consequence) for the different environmental values. If unpublished damage functions are used, these should be described and justified. Any assumptions made in the estimations, for example based on insufficient knowledge, should be described.
e) The analyses should give a balanced and general picture of the environmental risk and give a relevant basis for a decision, according to the first section. For fields with several activities, the risk

contribution from each activity/facility (for example pipeline or riser-discharges, drilling operations, production or offloading situations) should be described. For field development and fields in production, changes in the risk level caused by the different activity levels over time, should be described. For exploration drilling, this could be limited to blowouts, but with different contributions from a seafloor or surface blowout.

f) The results from the analyses should have a sufficient resolution and be presented on a monthly or seasonal basis. It should be possible to compare the environmental risk for the different facilities.

g) The risk contribution from the different facilities and activities should be seen in context according to the first section, first sentence. Unmanned facilities should be seen in context with the manned facility it is connected to.

For environmental emergency preparedness analyses

a) The operator should set goals for reduction of the environmental risk, including goals for protecting the vulnerable environmental values, prior to the emergency preparedness analysis. The analyses should also cover minor discharge incidents and measures to limit and combat these according to Section 7 of the Management regulations.

b) The selection of dimensioning incidents should be performed so that a sufficient part of the rate/duration distribution is covered and that no scenarios with a large rate and/or long duration with a significant probability is excluded. The operator must make a judgement on this, reviewing that the contingency shall be dimensioned in accordance to the risk.

c) The emergency preparedness analysis shall result in a description of the contingency requirements in all barriers, according to Section 73 of the Activities Regulations. The contingency requirements in the different barriers should be calculated based on statistical simulations of drift and dispersion. The expected weathering and amount of emulsion into each barrier should be specified.

d) As a part of the emergency preparedness analysis, damage calculations with different response alternatives, or an assessment or calculation of risk reduction showing the effect of the risk reducing measures, should be described. If the combination of presence of vulnerable environmental values and whether reduced accessibility/remoteness creates additional challenges for the preparedness, this should be described in the analysis.

Onshore petroleum activities

The following principles should be taken into account when carrying out environmental risk and emergency preparedness analyses for onshore facilities:

a) The responsible party should set goals for protection of prioritised, vulnerable environmental values. Before the analysis is carried out, various equipment alternatives and their availability shall be mapped. The analysis shall include the categories sea surface, water column and coast and shoreline, and it shall ensure that the varying vulnerability in the different geographical areas is accounted for.

b) The risk analyses should use the incident sequences that can result in acute pollution. The initiating incidents should be ranked, i.a. using analyses of drift and dispersion. The incident sequences should if necessary be supplemented with other types of incidents and conditions that can also result in acute pollution.

c) A rate/duration distribution shall be established for the identified discharge incidents. The incidents shall be analysed using analyses of drift and dispersion which include the rate/duration distribution. The analyses of drift and dispersion shall be carried out so that they cover the time periods when the ecosystems or specially selected elements in the ecosystems are most vulnerable to acute pollution.

d) The requirement for viewing risk contribution in context as mentioned in Section 11 of the Framework Regulations, entails that the result of the risk analysis shall have sufficient detail and be presented in comparable categories.

Important information for conducting environmental risk analyses includes:

a) the land facility's discharge potential,

b) likelihood of discharges from various facilities and different risky operations,

c) the physical, chemical and ecotoxicological properties of the pollution,

d) meteorological and oceanographical data on wind, temperature and current,

e) the drift and dispersion of the pollution,

f) the weathering and degradation of the pollution,

g) vulnerability of the ecosystems,

h) environmental databases and environmental prioritisation maps covering vulnerable and prioritised environmental values and their extent in time and space.

Safeguarding particularly vulnerable environmental values shall be highlighted in the environmental risk and emergency preparedness analyses.

Re Section 18
Working environment analysis

There are also requirements to analyses of the working environment in the Regulations relating to conduct of work (RCW) (in Norwegian only). They relate to

- use and handling of chemicals, cf. RCW chapter 3, with the exception of sections 3-23, 3-24 and 3-27 as far as offshore petroleum activities are concerned,
- risk of being exposed to biological factors, cf. RCW chapter 6,
- exposure to factors detrimental to reproduction, cf. RWC chapter 7,
- exposure to noise and mechanical vibrations detrimental to health, cf. RCW chapter 14, with the exception of sections 14-1 – 14-7 included, and 14-10, all as far as offshore petroleum activities are concerned,
- exposure to artificial optic radiation, cf. RCW chapter 16,
- conduct of manual work which may imply risk of strain detrimental to health, cf. RCW chapter 23,
- danger of snowslides, cf. RCW chapter 30.

Necessary analyses means e.g. analyses in connection with planning, operation and shutdown of offshore and onshore facilities, in connection with modification of existing offshore and onshore facilities, in connection with procurement or hire of new equipment, when chartering facilities, in connection with signing contracts with contractors and for organisational changes in the activities.

To ensure a sound working environment, the various analyses should complement each other so that they cover both hazard and accident situations and exposure to working environment factors. The analyses should include the use of data on

a) the personnel's individual or group workload and exposure to working environment factors, as well as data on how the employees experience the physical and psychosocial working environment,
b) working environment factors in the respective areas of the offshore or onshore facility,
c) work-related illness and work accidents

To fulfil the requirements for working environment analyses, the ISO 11064 standard, Part 1, should be used for design and manning of the control room.

Offshore petroleum activities

To satisfy the requirements for working environment analyses, the NORSOK S-002 standard, Chapter 4, should e.g. be used when engineering new facilities and in connection with modifications. Assessment of psychosocial factors during engineering can be in the form of comparative analyses using empirical data from operations phases with similar workplaces and work areas.

CHAPTER VI
FOLLOW-UP AND IMPROVEMENT

Re Section 19
Collection, processing and use of data

This section covers requirements for all types of data of significance to health, safety and the environment. Specific data requirements for various purposes are laid down in other sections of these Regulations, as well as in the Framework Regulations, the Technical and Operational Regulations, the Activities Regulations and the Facilities Regulations.

To fulfil the data requirements as mentioned in the first subsection, literas c and d, the ISO 14224 standard should be used for reliability and maintenance data for risk analyses in the health, working environment and safety area.

Re Section 20
Registration, review and investigation of hazard and accident situations

The registration as mentioned in the first subsection, should include a description of the situation, causal relations and the actual or potential consequence.

The investigation as mentioned in the second subsection, should e.g. clarify

a) the actual course of events and the consequences,
b) other potential courses of events and consequences
c) nonconformities in relation to requirements, methods and procedures,
d) human, technical and organisational causes of the hazard and accident situation, as well as in which processes and at what level the causes exist,
e) which barriers have failed, the cause of barrier failure and which barriers should have been established, if applicable,
f) which barriers functioned, i.e. which barriers contributed to prevent a hazard situation from developing into an accident, or which barriers reduced the consequences of an accident,
g) which measures should be implemented to prevent similar hazard and accident situations.

The investigation as mentioned in literas a to g, shall include actions against acute pollution, where relevant.

For hydrocarbon leaks, potential courses of events and consequences should be mapped, regardless of the ignition likelihood.

The requirement for organisation as mentioned in the third subsection, should e.g. indicate when contractors and suppliers shall participate.

Re Section 21
Follow-up

Follow-up means following up the party's own organisation, including system audits, management reviews, self-assessments, verifications, validations, measurements and surveys, see also the following standards: NS-EN ISO 9000, Chapters 3.11 and 3.13 and NS-EN ISO 9004, Chapter 8 and Appendix A of the standard as regards health, safety and working environment.

Follow-up also includes following up other participants' organisations, cf. Section 18 of the Framework Regulations.

Re Section 22
Handling of nonconformities

Following up nonconformities as mentioned in the first subsection, can be safeguarded e.g. in the established systems for maintenance administration, work permits, follow-up of hazards and accidents, and in the system for handling nonconformities. See also the NS-EN ISO 9004 standard, Chapter 8.3.

Correction as mentioned in the second subsection means measures to remove an identified nonconformity. See also the NS-EN ISO 9000 standard, Chapter 3.12.

Corrective measures as mentioned in the second subsection, means action eliminate the cause of a nonconformity and to prevent recurrence. See also the NS-EN ISO 9000 standard, Chapter 3.12.

Preventive measures as mentioned in the fourth subsection, means measures to remove the cause of a potential nonconformity or some other potential undesirable situation. See also the NS-EN ISO 9000 standard, Chapter 3.12.

Re Section 23
Continuous improvement

Identification as mentioned in the first subsection, can be based in part on the results of analyses and surveys, investigation of hazard and accident situations, handling of nonconformities, experience gained from internal follow-up or experience gained by others.

For requirements as regards implementing improvements, cf. also Section 11 and Section 13. See also the following standards: NS-EN ISO 9000, Chapter 2.3.5 and NS-EN ISO 9004, Chapter 9.2 and Appendix B.7 of the standard.

Applying experience as mentioned in the third subsection, can e.g. include information on faults and defects, as well as examples of good problem-solving and practices.

CHAPTER VII
MATERIAL AND INFORMATION

Re Section 24
Organisation of material and information

The requirement in the first section whereby information shall be made available to the supervisory authorities, entails that information shall be sent to the official address, i.e. the physical or electronic mailbox, unless otherwise stated. Form means the manner in which the information is made available, for example on a separate form or in tables. Information to be sent to the supervisory authorities upon request, can alternatively be made directly available in electronic form in consultation with said authorities. Directly available means that the supervisory authorities have access to the information via electronic information systems, and can access the information themselves, as needed. Information that is made directly available, can include e.g. individual documents in connection with an audit.

The delimitation in the second sentence entails that the information available in electronic format shall be easy to navigate so that the supervisory authorities can deem the information to have been received.

The requirement for a limited and coherent volume of information as mentioned in the first subsection, litera a, does not apply to documents that are linked electronically without clear demarcations (hypertextual documents).

Document format means the manner in which characters, structure and layout are organised. The document format should be stated when the document is made available electronically.

The first subsection allows for material and information to be made available to the supervisory authorities without using the document form. This can be discussed and agreed with the supervisory authorities in the individual case.

The requirement for recognised document format in the second subsection means that the following formats should be used:

a) as pure text: UTF-8 (ISO/IEC 10646-1:2000 Annex D) or ISO 8859-1:1998, Latin, 1,
b) TIFF – Tag Image File Format version 6,
c) XML – Extensible Markup Language version 1.0, and
d) PDF or PDF/A.

For documents made available pursuant to the third subsection, the preliminary versions should use a document format that best serves the objectives of reading and editing.

The fourth subsection on joint solutions and subsequent use entails that the licensees and others who take part in the activities, should manage electronic material and electronic information such that the material and the information can subsequently be recreated. This particularly applies to material that is saved electronically and information that, at a given point in time, has been made available to external users.

Offshore petroleum activities

The NORSOK Z-001 and NORSOK Z-003 standards should be used to fulfil the requirement for documents as mentioned in the first subsection, literas a and b, as regards technical operations documents.

Re Section 25
Consent requirements for certain activities

Sufficient time as mentioned in the first subsection, means the necessary time for the authorities to process applications and, if applicable, appeals, before the planned start-up date for the petroleum activity. Normal processing time is nine weeks. Other deadlines should be clarified with the supervisory authorities in each individual case. If the deadlines are not observed, one cannot expect that the application will be processed by the desired date.

Major modifications as mentioned in the third subsection, litera b, can include installation of a new module, major interventions in hydrocarbon-bearing systems or other major changes to physical barriers.

The requirement for a new consent in connection with significant changes in requirements or permits as mentioned in the third subsection, litera c, means that, if the operator is required to implement technical or

operational changes that have an impact on safety and working environment in the activities, the operator shall obtain consent before such changes can be implemented.

For clarification of which activities can be handled in the same application as mentioned in the first subsection, and what is meant by a significant change in the third subsection, litera c, the operator should contact the Petroleum Safety Authority Norway well in advance. For clarification of which activities can be addressed in the same application, the Petroleum Safety Authority Norway will base its decision on an assessment of the activities' risk and the involved players.

In order to fulfil requirements in Section 25 third subsection litera d last sentence, the procedure for handling "gaps" as found in Norwegian Oil and Gas' Guideline 122, should be used. Reference is also made to the Framework Regulations Section 11.

Offshore petroleum activities

Consent to use a facility or parts thereof as mentioned in the third subsection, litera a, also comprises change in operators and use of well intervention facilities and other units considered to be facilities, cf. the guidelines to Section 2 of the Framework Regulations.

Applications for lifetime extensions as mentioned in the third subsection, litera d, should be related to the facilities dealt with in the individual PDO/PIO. In the case where smaller facilities are linked to the facility or facilities referred to in the third subsection, litera d, and which have a different lifetime than this/these, the provision is not normally taken to entail a requirement for separate consent for these smaller, associated facilities. These smaller, associated facilities should be discussed and assessed in the application for consent for the facilities referred to in the third subsection, litera d. Examples of such smaller, associated facilities are individual seabed facilities, field pipelines, control cables and so forth.

The third subsection, litera d, does not apply to mobile facilities as these are covered under the Plan for Development and Operation (PDO) of petroleum deposits. Mobile facilities will normally be evaluated in connection with processing the application for consent pursuant to the fourth subsection, litera b, cf. Section 26, first subsection, litera g. Consents granted for the use of mobile facilities, are limited in time, i.e. continuous consideration is given to whether mobile facilities fulfil the regulatory requirements.

The requirement for consent to carry out exploration drilling as referred to in the fourth subsection, litera b, also encompasses drilling of exploration or appraisal wells from an existing facility that has consent for use as mentioned in the third subsection, litera a.

Removal or moving as mentioned in the fourth subsection, litera e, can be particularly relevant for flotels that are placed on a location indefinitely.

Re Section 26
Contents of applications for consent

The progress plan mentioned in the first subsection, litera b, should contain the key decision dates.

The Petroleum Safety Authority Norway coordinates the distribution of decisions made by the Petroleum Safety Authority Norway and the Norwegian Environment Agency to the responsible party who applied for consent. The Petroleum Safety Authority Norway does not issue consent until all relevant permits are in place.

Offshore petroleum activities

Applications for consent should contain the following regarding health-related factors:

a) a description of how the health service and the health-related preparedness are organised, including distribution of responsibilities and tasks, and with relevant information on the necessary number of nurses, responsible physician and physician on-call scheme, as well as required qualifications and need for training and drills for health personnel
b) results of risk and vulnerability assessments of health and hygienic factors, as well as planned and/or implemented measures in relation to these factors,
c) a description of the health department with information regarding where the health department is located, how the health office is equipped and the amount and selection of medical equipment and medicines, and accessibility of same,
d) a description of how the health-related preparedness is ensured, including a description of where the emergency hospital is located and what it is designed to handle, manning of the emergency hospital, training of first-aid providers, plan for transport of sick and injured personnel and system for handling medicines,

e) a description of a system to ensure drinking water of satisfactory quality and in sufficient amounts,
f) a description of a system to ensure adequate supplies of food, as well as sound food hygiene,
g) a description of a system for keeping and handling journals, and
h) a description of a system for handling nonconformities.

With regard to an overview of granted exemptions as mentioned in the first subsection, litera e, a new operator for a mobile facility should consider whether changed assumptions exist that necessitate application for a new exemption for the facility, or whether it is advisable to operate with the previously granted exemptions.

As regards the contents of programmes as mentioned in the fifth subsection, litera a, the NORSOK D-010 standard, Chapter 4.7, should be used.

For applications for consent in cases where an Acknowledgement of Compliance has also been granted, cf. Section 25 of the Framework Regulations, the Acknowledgement of Compliance with appurtenant information and documentation can replace parts of the information required under the first subsection, literas a to i, and the fourth subsection, literas a and b.

Application for consent pursuant to Section 25, third subsection, litera a and fourth subsection, litera b, should contain

a) information regarding the scope of geotechnical surveys, with a brief description of soil conditions in the uppermost layers, cf. Section 15 of the Activities Regulations
b) a brief summary of the assessment of the suitability of the relevant location, e.g. in relation to hundred-year current speeds, wind speeds and wave heights, and the planned air gap between the wave crest and the facility deck, cf. Section 15 of the Activities Regulations. For the northern areas, also which assessments have been carried out with regard to the consequences of sea ice, icebergs and low temperatures,
c) the main conclusions of the site-specific analyses and planned test tension of the anchor lines,
d) a brief summary of the operator's verification of the analyses, cf. Section 19 of the Framework Regulations.

Applications for consent for permanently placed facilities pursuant to Section 25, third subsection, litera d, should contain a summary of the operator's barrier management, cf. the Management Regulations Section 5, including identification of needs for updated performance requirements, which take into account the fact that ageing effects can lead to impairment of several barriers at the same time. Furthermore, the application should contain an assessment of potential preventive measures, cf. Section 11 of the Framework Regulations. The application should also contain

a) an overview of non-conformities and gaps, cf. Norwegian Oil and Gas' Guideline 122, and how these are handled with regard to risk reduction,
b) a description of the operator's use of information regarding previous behaviour and use of relevant equipment, including experience from similar facilities. This can require cooperation with other operators, shipowners and classification societies,
c) a description of how long one thinks the facility can now be used, or the length of the remaining facility lifetime for safe operations. Identification of the factors that will limit lifetime and indication of criteria for safe operation to the extent possible,
d) the operator's plans for modifications, replacements and repairs, if need be,
e) a description of changes in maintenance philosophy, strategy and programme, which will be implemented as a consequence of the expected ageing effects,
f) the period of time for which consent is applied.

The summary as mentioned in the above paragraph, should be prepared in accordance with Norwegian Oil and Gas' Guideline 122, complete with supplementary standards, and should contain a résumé of analyses carried out according to this guideline. For structures and maritime systems, the summary should, inter alia, contain a résumé of analyses carried out according to NORSOK N-006.

In order to fulfil the requirement to analyses as mentioned in the fourth subsection, relevant parts of Norwegian Oil and Gas' Guideline 122 should be used.

Onshore activities

For land facilities covered under the Petroleum Act, it is presumed that the application will contain an account of how the health-related requirements laid down in Section 68 of the Technical and Operational Regulations, will be complied with.

Re Section 27
Reporting working hours

This section addresses the need to obtain statistical material for use in preventive health, safety and environment work.

The hours are indicated on the electronic format determined by the Petroleum Safety Authority Norway.

Re Section 28
Information to the general public relating to safety measures for onshore facilities

The section applies only to activities at onshore facilities covered under the Framework Regulations, cf. Section 6, litera e, of the Framework Regulations.

The information as mentioned in this section, should generally be reviewed every three years and, if necessary, updated and reissued, and in any event, if there are changes in the operation. The information should be available to the public at all times, and communication to the general public should be repeated at least every five years.

CHAPTER VIII
NOTIFICATION AND REPORTING

Re Section 29
Notification and reporting of hazard and accident situations to the supervisory authorities

Procedures can be established whereby other parties than the operator can give notification under this provision, such as the principal undertaking. Pursuant to the Working Environment Act, the individual employer bears this responsibility.

The supervisory authorities stipulate the specific format for the written notification as mentioned in the first subsection, and the report as mentioned in the third subsection.

The Petroleum Safety Authority Norway notifies the Norwegian Coastal Administration by telephone. The Petroleum Safety Authority Norway forwards the written confirmation of the notification and the written report to the Norwegian l Coastal Administration, the Norwegian Environment Agency, the Norwegian Board of Health, the Directorate for Civil Protection and Emergency Planning and other relevant authorities.

Independently of the notification to the Petroleum Safety Authority Norway as mentioned in the first subsection, the Main Rescue Coordination Centre should be notified directly and as soon as possible in order to mobilise necessary public emergency response resources, cf. Section 77 of the Activities Regulations.

Notification and reports regarding contagious illnesses posing a threat to public safety, shall take place as mentioned in the Control of Communicable Diseases Act (in Norwegian only), cf. Regulations of 30 December 1994 No. 1224 relating to physicians' and other health personnel's reports on and notification of communicable illnesses.

Pursuant to the Drinking Water Regulations (in Norwegian only), the owner of the waterworks (operator) shall notify the Ministry of Health and Care Services in the event that limit values for drinking water quality as stated in the appendix to the Regulations are exceeded. Reference is made to the more detailed discussion of limit values, etc. in the Appendix to the Drinking Water Regulations.

Injury as mentioned in the first subsection, litera b, means serious personal injury or other health damage, reduced health or loss of financial assets, see also Section 11 of the Framework Regulations. Serious personal injury is defined in Section 31, first subsection.

Acute pollution as mentioned in the first subsection, litera e, is defined in Section 38 of the Pollution Control Act (in Norwegian only).

Offshore petroleum activities

Hazard and accident situations as mentioned in the first subsection include

a) situations where there is a danger that vessels or drifting objects can collide with facilities,
b) well control incidents, cf. also Norwegian Oil and Gas Guideline No. 135,
c) explosions and fires,
d) major accidental hydrocarbon and chemical discharges of significance to safety and the working environment,

e) accidental discharges of petroleum, drilling fluid and chemicals of significance to the external environment, cf. recommended levels for notification of acute pollution,
f) incidents where the use of radioactive sources is out of control.

Notification should be given of the following situations:

a) situations where the emergency response organisation is activated, or where preparations for evacuation are implemented,
b) situations where preparations have been made for moving personnel, or personnel have been moved as a consequence of meteorological forecasts,
c) situations where the safety delegate demands that dangerous work be stopped.

Hazard and accident situations as mentioned in the third subsection, can include

a) situations where special hygiene or health preparedness measures have been implemented, e.g. in connection with
    a) illness attributed to the water or food supply,
    b) failure of normal hygienic procedures resulting in increased risk of illness,
b) less serious situations in connection with positioning, pipeline systems and load-bearing structures,
c) violation of safety zones or areas subject to special limitations, cf. Section 57 of the Framework Regulations,
d) situations which have led to loss of deck cargo, anchoring, mooring and towing equipment, and drilling and well equipment. The notification should indicate the exact position,
e) accidental hydrocarbon and chemical discharges of lesser significance to safety and the working environment,
f) accidental discharges of petroleum, drilling fluid and chemicals of lesser significance to the external environment, cf. recommended levels for notification of such discharges,
g) situations where radioactive sources are stuck in the well,
h) situations where individual measurements show that employees have been exposed to radiation (effective dose equivalent) of more than 20 mSv during the course of twelve months.

In the event of work accidents that have led to death or serious personal injury, the Police shall be notified as mentioned in Section 5-2 of the Working Environment Act. The prevailing practice has been for the operator to notify the Police of fires and other serious accidents. The correct police authority for offshore incidents is

a) Rogaland Police District, south of 62 degrees latitude,
b) Nordmøre og Romsdal Police District, between 62 – 65 degrees, 30 minutes,
c) Helgeland Police District between 65 degrees, 30 minutes and 68 degrees, 30 minutes,
d) Troms Police District north of 68 degrees, 30 minutes.

In the event of helicopter accidents, the aviation enterprise shall notify the Civil Aviation Authority, the Accident Investigation Board Norway and the Police in accordance with BSL 1-3, Regulations relating to notification duty in connection with aviation (in Norwegian only).

Incidents involving ionising radiation sources in connection with borehole logging, use of industrial control sources and industrial radiography, shall be notified directly to the Norwegian Directorate of Health pursuant to Section 19 of the Radiation Protection Regulations (in Norwegian only).

Recommended levels for notification and reports regarding accidental discharges:

Discharge	**Notification pursuant to first subsection**	**Report pursuant to second subsection**
Chemicals in black and red categories, liquid hydrocarbons	When mapping or combating is appropriate and in all events when > 1 m^3	> 0.010 m^3
Chemicals in yellow and green category		> 10 m^3

For these purposes, chemicals means substances used in concentrated form or in mixtures including solvents. For mixtures of chemicals, the discharge is assigned to the category representing the most environmentally hazardous substance.

The operator should also consider the need for notification in the event of minor incidents in special cases. Examples of such cases are repeated minor discharges during a short period of time. In such special cases, the operator should consider whether there is a need to give formal notification where a report is

normally sufficient. An example of this is discharges that can harm particularly vulnerable environmental values, such as flocks of seabirds, the presence of corals or other valuable sea floor habitats.

Discharges that are visible on the sea but have no known cause, are subject to a duty of notification to the Norwegian Coastal Administration; cf. Section 39 of the Pollution Control Act (in Norwegian only).

The requirement for notification and reporting should be viewed in context with e.g. Sections 20, 30 and 34 of the Management Regulations and Section 77, litera e of the Activities Regulations.

The Norwegian Environment Agency can stipulate more detailed requirements for notification and reporting in special cases, for example in connection with exploration drilling near land in particularly vulnerable areas.

Acute pollution is defined in Section 38 of the Pollution Control Act (in Norwegian only) as "pollution of importance, which happens suddenly, and which is not allowed according to provision in or pursuant to this Act". This means that an accidental discharge can be considered acute pollution even if limit values in a permit granted pursuant to Section 11 of the Pollution Control Act (in Norwegian only), have not been exceeded. An example of this is an abnormal discharge situation with high concentrations of oil in water over a short period of time, even if this does not lead to overruns in relation to the permit in the form of a monthly average. Similarly, pollution can be deemed acute and the harmful effects on the environment can be serious, even if the pollution develops gradually and over a longer period of time, for example in connection with leaks from tanks, pipelines, etc. In each individual case, the operator shall determine whether the discharge entails a need for notification or reporting.

A description of how to determine what is meant by lawful and unlawful pollution is provided in the Guidelines relating to Section 34 of the Management Regulations.

Onshore activities

Hazard and accident situations as mentioned in the first subsection can be

a) explosions and fires,
b) major accidental hydrocarbon and chemical discharges of significance for safety and the working environment,
c) accidental discharges of petroleum and chemicals of significance for the external environment,
d) incidents where the use of radioactive sources is out of control,
e) hazardous substances not accounted for, cf. Regulations relating to explosive goods.

Notification should be given regarding the following situations:

a) situations where the emergency response organisation is activated, or where preparations for evacuation are implemented,
b) situations where the safety delegate demands that dangerous work be stopped.

Hazard and accident situations as mentioned in the third subsection, can include

a) situations where special hygiene or health preparedness measures have been implemented, e.g. in connection with
    a) illness attributed to the water or food supply,
    b) failure of normal hygienic procedures resulting in increased risk of illness,
b) less serious situations in connection with pipeline systems and load-bearing structures,
c) accidental hydrocarbon and chemical discharges of lesser significance for safety and the working environment,
d) accidental discharges of petroleum and chemicals of lesser significance for the external environment,
e) situations where individual measurements show that employees have been exposed to radiation (effective dose equivalent) of more than 20 mSv during the course of twelve months.

In the event of work accidents entailing loss of life or serious personal injury, the Police shall be notified as mentioned in Section 5-2 of the Working Environment Act. As regards land facilities, the correct police authority is the respective district where the land facilities are located.

Re Section 30
Information on follow-up of hazard and accident situations

Independent of the update of the Petroleum Safety Authority Norway as mentioned in the first subsection, the Main Rescue Coordination Centre should also be informed about developments in the evacuation, rescue and response phases.

Notification of the supervisory authorities under the second subsection should include causal relations and the company's plans for start-up. As regards actions against acute pollution, the report should include

results of mapping of acute pollution in accordance with Section 57 of the Activities Regulations. The Norwegian Coastal Administration is the supervisory authority for actions against acute pollution. The supervisory authorities can require the operator to apply for a new consent pursuant to Section 25, second subsection.

The Norwegian Coastal Administration and the Norwegian Environment Agency have different tasks associated with the follow-up of acute pollution from the petroleum activities. The results of the environmental survey in accordance with Section 58 of the Activities Regulations is an important basis for the follow-up of incidents in both public bodies. Hence, reports of environmental surveys in the event of acute pollution shall be submitted to both the Norwegian Coastal Administration and the Norwegian Environment Agency.

Re Section 31
Reporting accidents involving death or injury

The accident shall be reported even if notification has been given or a report made pursuant to Section 29, first subsection.

The NAV form states that if the accident takes place offshore, the report shall also be sent to NAV management Sauda, on the Labour and Welfare Administration form NAV 13-06.05.

If the accident takes place at a land facility, the report shall also be sent to the local national insurance office on form NAV 13-07.05.

Serious personal injury as mentioned in the first subsection, litera b, means

a) head injuries involving concussion, loss of consciousness or other serious consequences,
b) loss of consciousness due to other causes,
c) skeletal injuries and tendon injuries, with the exception of rupture or fracture of fingers or toes where the adjoining bones are not out of position (not dislocated fracture),
d) injury to internal organs,
e) full or partial amputation of body parts, with the exception of nails, or the tips of fingers or toes without simultaneous loss of bone substance,
f) poisoning or chemical exposure with danger of permanent health injury,
g) burns, frostbite or corrosive injury involving the full dermis (third degree) or partial dermal injuries (second degree) of the face, hands, feet or in the abdomen, as well as all partial dermal injuries affecting more than five per cent of the body,
h) general hypothermia (second degree or higher)
i) permanent damage or delayed consequences of injury leading to defined medical disability, cf. the Directorate of Labour and Welfare's disability tables,
j) eye injuries leading to full or partial loss of sight,
k) ear injuries leading to full or partial loss of hearing,
l) injury with extensive loss of muscle mass or skin.

Accidents that have led to work disability and absence pursuant to the first subsection, litera c, means accidents with the result that the injured person is unable to return to work, or cannot perform his/her normal work tasks in the following or subsequent shifts. This also includes cases where the injury occurs on the last day of a work period. Medical treatment accidents as mentioned in the first subsection, litera c, means personal injury requiring treatment or examination by a doctor, or where treatment is provided under the guidance of a doctor, for example minor surgery, stitches or use of prescription medicines. Diagnostic examination by a doctor where no injury can be ascertained shall not be classified as medical treatment. Simple dressing of wounds, eye flushing, etc. are not considered medical treatment, even if administered by a doctor.

First aid injuries mean personal injuries that do not lead to absence or require medical treatment.

The requirement for copies of the report is intended to contribute to coordinating the enterprises' safety and environment work:

Re Section 32
Notification of possible work-related illness

This section is an elaboration of Section 5-3 of the Working Environment Act.

Reports regarding possible work-related illness shall be provided on the Petroleum Safety Authority Norway's and the Norwegian Labour Inspection Authority's form 154 b, no later than one month after the

illness became evident. Occupational illnesses shall be reported on the Norwegian Labour and Welfare Administration form NAV 13-06.05 for offshore petroleum activities and NAV 13-07.05 for activities on land facilities.

Notifiable work-related illness can be diagnosed on the basis of

a) knowledge of the link between a specific type of illness and specific working environment factors,
b) documented working environment factors to which the sick employee has been exposed, and the degree of exposure to these factors,
c) occurrence of the illness in groups with different exposure duration and different degrees of exposure.

The Petroleum Safety Authority Norway does not find it expedient to state a lower limit for the causal weight (causal per cent) required to determine that an illness is work-related. In the individual case of illness, it is often difficult to determine such a percentage. Therefore, the reporting requirement entails that the Petroleum Safety Authority Norway shall be notified of all illnesses where the working environment may have contributed to the illness.

Reports to the employer are governed in Section 2-3, second subsection, litera e of the Working Environment Act.

Employees can also report directly to health personnel, cf. Section 3-3 of the Working Environment Act. In such cases, the employees should also submit to an examination by these personnel.

Re Section 33
Notification of diving operations in connection with onshore facilities

The reporting requirement relates to diving in "sheltered waters" in connection with land facilities, where consent is not required pursuant to Section 25. The report can form the basis for audit activities. Information regarding participating players means the name of companies, or sole proprietorships involved in the diving operation, address, etc. and contact person. Information on the activity to be carried out, means, in addition to the assignment itself, also the diving method, diving system and equipment and diving facility (vessel/barge or other).

Unless otherwise stated by the Petroleum Safety Authority Norway, the deadline for sending notification is at least three weeks prior to start-up of the diving operation.

CHAPTER IX
REPORTING AND INFORMATION RELATING TO OFFSHORE PETROLEUM ACTIVITIES

Re Section 34
Information on monitoring, emissions, discharges and risk of pollution

The requirement to reporting in litera a also comprises a report on environmental surveys in the event of acute pollution.

The authorities recommend that the operators make active use of the reports internally in order to implement additional measures designed to reduce discharges and emissions from the facilities.

The Norwegian Oil and Gas Association has drawn up guidelines for the reporting requirements in Section 34 litera c. These guidelines can be regarded as a contribution towards simplifying reporting and making it more coordinated, and can be used in addition to the Norwegian Environment Agency's *Guidelines for reporting from the petroleum activities offshore (in Norwegian only)*. The guidelines of the Norwegian Oil and Gas Association include, inter alia, definitions of which chemicals sort under the different areas of use in Chapters 4.2-4.9 of the Appendix.

Deadline for reporting is 15 March, when reports and reported numbers shall be quality assured and stored in EEH. The Norwegian Environment Agency will store the PDF version of reports in the electronic archive of the Agency, thereby making them available in the public journal. Relevant parts of the numerical material will be transferred to the data base Total emissions to air in Norway.

The Norwegian Environment Agency reports discharges from the petroleum activities on the Norwegian continental shelf to OSPAR (the Oslo and Paris Commission) in accordance with OSPAR's guidelines. Different parts of the companies' annual reports form the basis for the Norwegian Environment Agency's reporting to OSPAR. Use and discharge of drilling fluids, oil with produced water and chemicals are examples of what the Norwegian Environment Agency's reports.

Significant changes in the environmental risk should be reported immediately. Examples of such changes include changes in preparedness against acute pollution. Other changes can be reported in connection with zero discharge reporting. When presenting environmental risk, the selected methodology should be described and explained. Environmental risk should be presented for the field as a whole. Environmental risk associated with the various facilities on the field, can be described in Chapter 10; Appendix.

A brief interpretation should be provided of the environmental risk figures, comparisons should be made with previous years, and the causes of any changes in risk should be explained.

A summary and description as mentioned in litera d regarding preparedness against acute pollution, is discussed in connection with the application for permission to carry out activities under the Pollution Control Act (in Norwegian only). Therefore, the documents should be submitted to the Norwegian Environment Agency simultaneously with the application for permission.

In-depth description of the Pollution Control Act and the terms used in the Act, in connection with the reporting requirements.

General

The Pollution Control Act (in Norwegian only) is structured with a general prohibition against having, doing or implementing anything that can entail a danger of pollution. Pollution is only allowed if it is lawful pursuant to Section 8 or Section 9 of the Pollution Control Act (in Norwegian only), or if consent has been granted pursuant to Section 11. The fact that pollution has actually occurred, is not decisive. Instances where there is a danger of pollution, are also covered by the prohibition.

Pollution can be divided into lawful and unlawful pollution:

Lawful pollution	Unlawful pollution Section 7 of the Pollution Control Act (in Norwegian only)	
Pollution that is lawful pursuant to Sections 8 and 9 of the Pollution Control Act, or permitted pursuant to Section 11	Acute pollution, cf. Chapter 6 Acute pollution	Other unlawful pollution Pollution that entails violation of the Pollution Control Act and/or decisions pursuant to the Act, but which do not entail acute pollution

Lawful pollution

Section 8 of the Pollution Control Act (in Norwegian only):

Nearly all human activity contributes to creating pollution. It is not expedient to regulate all actions that can lead to pollution. Therefore, some exemptions have been made from the prohibition against pollution. Among other things, ordinary pollution from offices, business or assembly premises, warehouses, etc. are permitted under this section. It is important to note that not every type of pollution from the listed enterprises is allowed. Only "ordinary pollution" is comprised by the exemption. The term "ordinary pollution" relates to the type of pollution, its extent and impact, and not to whether the operation or usage that creates the pollution is ordinary.

Pursuant to Section 8, last subsection, pollution that does not entail significant damage or nuisance, is low. Pollution in Section 8 refers to circumstances that regularly lead to pollution.

Section 9 of the Pollution Control Act (in Norwegian only):

Pollution can be regulated in regulations. One example of this is the HSE regulations for petroleum activities.

Section 11 of the Pollution Control Act (in Norwegian only):

Upon application, the pollution control authority can grant permits for polluting activity. In special cases, permits can be granted without submitting an application. A permit pursuant to Section 11, can stipulate conditions pursuant to Section 16.

Unlawful pollution

Acute pollution

In enterprises where there is danger of acute pollution, the responsible party has a duty to maintain emergency preparedness pursuant to Chapter 6 of the Pollution Control Act (in Norwegian only). If acute pollution has occurred, the duties of the responsible party include a duty to provide notification and a duty to take action. Section 38 of the Pollution Control Act (in Norwegian only) defines acute pollution as significant pollution that occurs suddenly, and that is not permitted pursuant to the provisions in, or in pursuance of, the Pollution Control Act (in Norwegian only).

Significant

The pollution entails or can entail damage or nuisance for the environment beyond the purely minor. Whether or not the pollution is of significance, shall be assessed in each individual case.

Occurs suddenly

The pollution occurs accidentally, as a consequence of an abnormal situation in the enterprise, or as a consequence of intentional wrongful acts. The pollution and/or the harmful effects on the environment can also be of an acute nature, even if the pollution develops gradually over a longer period of time. This can, for example, be in cases where a tank is leaking for a lengthy period.

Not permitted pursuant to the provisions in or in pursuance of the Pollution Control Act (in Norwegian only).

Pollution that is not permitted pursuant to Sections 8, 9 or 11 of the Pollution Control Act (in Norwegian only).

Other unlawful pollution

Pollution in excess of the permitted limits that is not covered by the definition of acute pollution. This will e.g. include discharges previously referred to as excess discharges.

Re Section 35
Reporting from manned underwater operations

The activity report as mentioned in the first subsection, should be written in the electronic format determined by the Petroleum Safety Authority Norway.

The experience report as mentioned in the second subsection, should summarise and evaluate the experience gained with the equipment and the procedures used. Medical, operational and technical assessments should also be included.

Re Section 36
Reporting damage to load-bearing structures and pipeline systems

Routines can be established whereby parties other than the operator provide reports pursuant to this provision.

The reporting shall be in accordance with the criteria and the format provided in the user guidelines for the database as mentioned in the first subsection.

Re Section 37
Programme for and information on drilling and well activities

The deadlines for submittal as mentioned in this section, will normally be as follows:

a) for the main plan for drilling and well activities for development well: deadline for PDO, cf. Guidelines to the plan for development and operation of a petroleum deposit (PDO) and plan for installation and operation of facilities for transport and for utilisation of petroleum (PIO) (in Norwegian only), issued in February 2010, Chapter 4.15,
b) for programmes for exploration and appraisal drilling activities: nine weeks before start-up with a requirement for consent as mentioned in Section 25, literas a and b, as well as litera d if the facility is used to carry out drilling or well activities, cf. Section 26, Number 2, litera a,
c) for general plans for drilling and well activities: monthly,

d) for programmes for temporary or permanent plugback of exploration or development wells in the event of labour disputes: within four days after notification is given of collective resignation in labour disputes as mentioned in Section 39,
e) for final reports on technical drilling experiences, including experiences with permanent plugging and abandonment, and on HSE experiences following completed drilling and well activities: no later than three months after the activity ends, cf. NORSOK D-010 Chapter 4.10.
f) for information about plans for drilling activities that require more than one (1) relief well, cf. Section 86, second subsection, of the Activities Regulations: no later than three months before planned start-up of the activity.

Re Section 38
Reporting drilling and well activities

The reporting shall be in accordance with the criteria, the deadlines and the format provided in the user guidelines for the DDRS database as mentioned in the first subsection.

Re Section 39
Well programme in the event of labour disputes

The requirement means that the operator shall not plan for an emergency shutdown, but rather a controlled, temporary abandonment of the well in accordance with the procedures and the programme.

The reason for the deadlines as mentioned in the second and third subsection, is that the operator does not know which personnel will be taken out on strike until the notification of collective resignation, and thus cannot know which consequences the strike will have for the activity, and which wells may have to be shut down.

Re Section 40
Material and information to be sent to other institutions

Information in the Notifications to Seafarers as mentioned in literas c and d, should be submitted 30 days before implementing the measures to which the information applies. The fishery publications as mentioned in literas c and e, are "Fiskeribladet Fiskaren". The measured data and the report on data quality as mentioned in literas f and g, should be submitted within one month after the registration period is concluded.

Re Section 41
Publicly available information on oceanography, meteorology, earthquakes and full-scale measurements

The requirement in the first subsection to make the information publicly available, entails that all interested parties have access to the information, e.g. through databases, publications or lectures.

Important results as mentioned in the second subsection, include e.g. how the measurements correspond with analyses.

Re Section 42
Retention of material and information

The retention requirement in the first subsection is a consequence of the duty to keep material and information available pursuant to Section 10-4 of the Petroleum Act. In the comments relating to Section 10-4, second subsection of the Petroleum Act, a condition is set that "a curtailment in the duty to keep material and information available shall not be at the expense of the authorities' actual needs", see Odelsting Proposition No. 43 (1995-1996), page 61. Both the industry's and the authorities' needs could vary to such a degree that it will not be possible to state a number of years for retaining the respective types of material and information.

The mapping results according to the first subsection, litera i, include e.g. exposure to carcinogenic substances. The retention period for mapping results is given in provisions of the Regulations relating to organisation, management and participation.

The content of potential obligations will depend on the circumstances surrounding the disposal decision as mentioned in the second subsection. The obligation can thus rest with the licensee, the owner or others. Reference is made here to the comments to the Petroleum Act, Section 5-1, second, third and fourth subsections in Odelsting Proposition No. 43 (1995-1996), page 52.

The requirement for an account in the cessation plan as mentioned in the third subsection, entails that the licensee shall describe potential future areas of use for material and information in the cessation plan.

The hand-over requirement as mentioned in the fourth subsection, will normally apply to the party that has a duty to carry out the disposal decision pursuant to the Petroleum Act, Section 5-3, see second subsection.

Discarded as mentioned in the fifth subsection, means a managed selection process in archives and databases to pick out material and information that can be omitted. If the material and the information are limited to the Petroleum Safety Authority Norway's management area, and have been sent to the Petroleum Safety Authority Norway's official address, the discarding can be carried out assuming that the requirement in the first subsection has been fulfilled. This does not apply to material or information regarding the management system, because this could touch on the management area of the Norwegian Environment Agency and the Norwegian Board of Health. These regulations do not restrict the provisions in the health legislation regarding retention of the health service's documentation; cf. e.g. the journal regulations based on the Health Personnel Act. (in Norwegian only)

Destroyed as mentioned in the fifth subsection, means physically destroying discarded material and information.

CHAPTER X
CONCLUDING PROVISIONS

Re Section 43
Supervision, decisions, enforcement, etc.

No comments.

Re Section 44
Entry into force

See Section 73 of the Framework Regulations, too.

LIST OF REFERENCES

1. Regulations and guidelines issued by the authorities

The Ministry of Petroleum and Energy and the Ministry of Labour and Social Affairs
Guidelines to plans for development and operation of a petroleum deposit (PDO) and plans for installation and operation of facilities for transport and for utilisation of petroleum (PIO) (in Norwegian only), February 2010.

The Ministry of Health and Care Services
Regulations of 29 October 2010 No. 1380 relating to radiation protection and use of radiation (the Radiation Protection Regulations) (in Norwegian only).

The Norwegian Petroleum Directorate
Regulations of 18 June 2001 No. 749 relating to resource management in the petroleum activities (in Norwegian only),

Petroleum Safety Authority Norway
Corrosion and Damage (CODAM) – Format for reporting of damage and nonconformities to the PSA's database for load-bearing structures and pipeline systems (in Norwegian only), 2013.
Daily Drilling Reporting System (DDRS) – user guide for daily drilling report system, February 2008.

The Norwegian Environment Agency
(In Norwegian only)
Guidelines for reporting from the petroleum activities offshore (M-107),
Guidelines for environmental monitoring of offshore petroleum activities (M-300)

The Norwegian Maritime Authority
Regulations of 22 December 1993 No. 1239 relating to risk analyses for mobile facilities (in Norwegian only).

2. Standards and guidelines

International Electrotechnical Commission (IEC)
NEK IEC 61508:1998 Functional safety of electrical/electronic/programmable electronic safety-related systems, edition 2, 2010,
Part 1: General requirements,
Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems,
Part 3: Software requirements,
Part 4: Definitions and abbreviations,
Part 5: Examples of methods for the determination of safety integrity levels,
Part 6: Guidelines on the application of IEC 61508-2 and 61508-3,
Part 7: Overview of techniques and measures.
IEC 61511 Functional safety - Safety instrumented systems for the process industry sector – all parts, edition 1, 2004,
NEK IEC 62061 Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems, edition 1.1, 2012.

International Organization for Standardization (ISO)
ISO/IEC 8859-1 Information technology – 8-bit single-byte coded graphic character sets – Part 1: Latin alphabet No. 1, 1998,
NS-EN ISO 9000:2015 Quality management systems – Fundamentals and vocabulary, September 2015,
NS-EN ISO 9004:2009 Managing for the sustained success of an organization – A quality management approach, November 2009,

NS-EN ISO 11064:2000 Ergonomic design of control centres – Part 1: Principles for the design of control centres, edition 1, April 2001,
ISO 12639:2004 Graphic technology – Prepress digital data exchange – Tag image file format for image technology (TIFF/IT), edition 2, May 2004,
NS-EN ISO 14224:2016 Petroleum and natural gas industries, Collection and exchange of reliability and maintenance data for equipment, edition 3, October 2016,
NS-EN ISO 17776:2002 Petroleum and natural gas industries – Offshore production installations – Guidelines on tools and techniques for hazard identification and risk assessment, edition 1, June 2002,
NS-EN ISO 13702:2015 Petroleum and natural gas industries – Control and mitigation of fires and explosions on offshore production installations – Requirements and guidelines, edition 1, 2015,
NS-ISO 31000:2009 Risk management - Principles and guidelines,
NS-EN ISO 13849-1 Safety of machinery - Safety-related parts of control systems Part 1: General principles for design.

NORSOK standards
NORSOK D-010 Well integrity in drilling and well operations, revision 4, June 2013,
NORSOK N-003 Action and action effects, edition 2, September 2007,
NORSOK N-006 Assessment of structural integrity for existing offshore load-bearing structures, edition 1, March 2009,
NORSOK S-002 Working environment, revision 4, August 2004,
NORSOK Z-001 Documentation for operation, revision 4, March 1998,
NORSOK Z-003 Technical information flow requirements, revision 2, May 1998,
NORSOK Z-013 Risk and emergency preparedness analysis, revision 3, October 2010.

Norwegian Oil and Gas Association
070 - Norwegian Oil and Gas Guidelines for the application of IEC 61508 and IEC 61511 in the Norwegian petroleum industry, no. 070, revision no. 02, 29 October 2004,
122 – Norwegian Oil and Gas Recommended guidelines for the assessment and documentation of service life extension of facilities, revision 1, 4 June 2012,
135 – Norwegian Oil and Gas Recommended guidelines for classification and categorization of well control incidents and well integrity incidents, revision 2, December 2014.