Supporting Document for the Arctic Council Offshore Oil and Gas Guidelines: Systems Safety Management and Safety Culture

Text of Regulations for 9 Selected Safety Systems Elements contained in AOOGG: Systems Safety Management and Safety Culture Table A1 Appendix A.

The Arctic Offshore Oil and Gas Guidelines: Systems Safety Management and Safety Culture provide guidance on:

- Continual Improvement
- Risk/Hazards Analysis
- Management of Change
- Training and Competence for Arctic
- Accountability and Responsibility
- Operating Procedures
- Quality Assurance/Mechanical Integrity
- Documentation and Reporting
- Communication

Below is the text of the regulations governing these elements from Norway, Canada, Greenland and the United States. Regulations for countries not shown were not readily available to PAME for inclusion in listing.

This work can serve as a mechanism to compare different rules covering the main elements of management systems and provide common understanding for possible cooperation in improving the safety and environmental protection of Arctic offshore oil and gas operations.

Notes:

1. Rules or National Guidance cited here are for the most part; those governing the management systems, but some are partly prescriptive operational rules. This can be refined.
2. Regulations for Norway are from the Management Regulations[1], for Canada they are from the Canada Oil and Gas Drilling and Production Regulations[2] or the Canada Oil and Gas Operations Act[3], Greenland's regulations and guidance come from the Executive order on health and safety[4] or the Mineral Resources Act[5], and the MLSA exploration

[1] Regulations Relating to Management and the Duty to Provide Information in the Petroleum Activities and at Certain Onshore Facilities (The Management Regulations) http://www.ptil.no/management/category401.html#_Toc280619385 Chapter 2 Section 6 Management of health, safety and the environment cf. Section 17 of the Framework Regulations

[2] Canada Oil and Gas Drilling and Production Regulations http://laws-lois.justice.gc.ca

[3] Canada Oil and Gas Operations Act. R.S., 1985, c. O-7, s. 1; 1992, c. 35, s. 2. http://laws-lois.justice.gc.ca/eng/acts/O-7

[4] Executive order on health and safety in connection with offshore hydrocarbon activities in Greenland.(in Danish) http://dk.nanoq.gl/Service/Hoeringsportal/Bekendtgoerelser/2011/sikkerhed%20og%20sundhed%20på%20mobile%20offshoreanlæg%20ifb%20med%20offshore%20kulbrinteaktiviteter%20i%20Grønland.aspx

drilling guidelines (DG)[6], and rules for the United States are from the Code of Federal Regulations (CFR)[7]

3. Rules cited here may be out-of-date or may need updating countries need to keep the Comparison Table modernized.
4. Rules may need to be added to certain element categories.
5. Rules cited may not be totally appropriate to the management element category they were assigned.
6. Text excerpts of the Greenland EO Regulations are not from an official or professional translation, so they cannot be considered official nor necessarily accurate.
7. These regulations will be updated as necessary. New information or corrections are welcome. Please send information to the PAME Secretariat pame@pame.is

Continual Improvement

Norway: *Continual Improvement*

Management of health, safety and the environment: C2 S6: The responsible party shall ensure that the management of health, safety and the environment comprises the activities, resources, processes and organisation necessary to ensure prudent activities and continuous improvement.

Management of health, safety and the environment: C6 S23 The responsible party shall continuously improve health, safety and the environment by identifying the processes, activities and products in need of improvement, and implementing necessary improvement measures. The measures shall be followed up and the effects evaluated. The individual employee shall be encouraged to actively identify weaknesses and suggest solutions, Applying experience from own and others' activities shall be facilitated in the improvement work.

Canada: *Continual Improvement*

Management Systems 5. (2) (*i*): The management system shall include the processes for conducting periodic reviews or audits of the system and for taking corrective actions if reviews or audits identify areas of non-conformance with the system and opportunities for improvement;

Greenland: *Continual Improvement*

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[5] Greenland Parliament Act of 7 December 2009 on mineral resources and mineral resource activities (the Mineral Resources Act), chapter 13, 14, 15: environmental protection, environmental liability, environmental impact assessment, chapter 17: health and safety for offshore installations.
http://www.govmin.gl/images/stories/faelles/mineral_resources_act_unofficial_translation.pdf

[6] MLSA exploration drilling guidelines (DG)
http://www.govmin.gl/images/stories/petroleum/110502_Drilling_Guidelines.pdf

[7] Code of Federal Regulations 30 CFR Subpart S, Safety and Environmental Management Systems (1010–0186), including Form BSEE–0131, Performance Measures Data
http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=a6aca655228a4f5d6ca2a70b35270de2&rgn=div6&view=text&node=30:2.0.1.2.2.19&idno=30

M*anaging safety and health management system for safety and health* § 19 (1): If the operator company has chosen to build its management system after another similar system, management system, as a minimum, include a policy set by your organization for health and safety, which among other things includes a commitment to continual search of improvement of safety and health level,

United States: *Continual Improvement*

Management's general responsibilities for the SEMS program § 250.1909
You (the Operator), through your management, must require that the program elements discussed in API RP 75 (as incorporated by reference in §250.198) and in this subpart are properly documented and are available at field and office locations, as appropriate for each program element. You, through your management, are responsible for the development, support, continued improvement, and overall success of your SEMS program. Specifically you, through your management, must:

> (a) Establish goals and performance measures, demand accountability for implementation, and provide necessary resources for carrying out an effective SEMS program.
>
> (d) At intervals specified in the SEMS program and at least annually, review the SEMS program to determine if it continues to be suitable, adequate and effective (by addressing the possible need for changes to policy, objectives, and other elements of the program in light of program audit results, changing circumstances and the commitment to continual improvement) and document the observations, conclusions and recommendations of that review.
>
> (f) Utilize personnel with expertise in identifying safety hazards, environmental impacts, optimizing operations, developing safe work practices, developing training programs and investigating incidents.
>
> (j) Ensure that the SEMS program is maintained and kept up to date by means of periodic audits to ensure effective performance

Criteria for hazards analyses in the SEMS program §250.1911 (3): You should assure that the recommendations in the hazards analysis are resolved and that the resolution is documented.

Criteria for documenting safe work practices and contractor selection the SEMS program § 250.1914: You must perform periodic evaluations of the performance of contract employees that verifies they are fulfilling their obligations

Risk/Hazards Analysis

Norway: *Risk Management*

Risk reduction C2 S4: In reducing risk as mentioned in Section 11 of the Framework Regulations, the responsible party shall select technical, operational and organisational solutions that reduce the probability that harm, errors and hazard and accident situations occur.

Furthermore, barriers as mentioned in Section 5 shall be established.

The solutions and barriers that have the greatest risk-reducing effect shall be chosen based on an individual as well as an overall evaluation. Collective protective measures shall be preferred over protective measures aimed at individuals.

Risk reduction C2 S5: Barriers shall be established that:

a) reduce the probability of failures and hazard and accident situations developing,
b) limit possible harm and disadvantages.

Where more than one barrier is necessary, there shall be sufficient independence between barriers.

The operator or the party responsible for operation of an offshore or onshore facility, shall stipulate the strategies and principles that form the basis for design, use and maintenance of barriers, so that the barriers' function is safeguarded throughout the offshore or onshore facility's life.

Personnel shall be aware of what barriers have been established and which function they are intended to fulfil, as well as what performance requirements have been defined in respect of the technical, operational or organisational elements necessary for the individual barrier to be effective.

Personnel shall be aware of which barriers are not functioning or have been impaired.
The responsible party shall implement the necessary measures to remedy or compensate for missing or impaired barriers.

Norway: *Risk Analysis*

General requirements for analyses C5 S16: The responsible party shall ensure that analyses are carried out that provide the necessary basis for making decisions to safeguard health, safety and the environment. Recognised and suitable models, methods and data shall be used when conducting and updating the analyses.

The purpose of each risk analysis shall be clear, as well as the conditions, premises and limitations that form its basis.

The individual analysis shall be presented such that the target groups receive a balanced and comprehensive presentation of the analysis and the results.

Criteria shall be set for carrying out new analyses and/or updating existing analyses as regards changes in conditions, assumptions, knowledge and definitions that, individually or collectively, influence the risk associated with the activities.

The operator or the party responsible for operating an offshore or onshore facility shall maintain a comprehensive overview of the analyses that have been carried out and are underway.

Necessary consistency shall be ensured between analyses that complement or expand upon each other.

Risk analyses and emergency preparedness assessments C5 S17: The responsible party shall carry out risk analyses that provide a balanced and most comprehensive possible picture of the risk associated with the activities. The analyses shall be appropriate as regards providing support for decisions related to the upcoming operation or phase. Risk analyses shall be carried out to identify and assess contributions to major accident and environmental risk, as well as ascertain the effects various operations and modifications will have on major accident and environmental risk.

Necessary assessments shall be carried out of sensitivity and uncertainty.
The risk analyses shall

a) identify hazard and accident situations,
b) identify initiating incidents and ascertain the causes of such incidents,
c) analyse accident sequences and potential consequences, and
d) identify and analyse risk-reducing measures.

Risk analyses shall be carried out and form part of the basis for making decisions when e.g.:

a) classifying areas, systems and equipment,
b) demonstrating that the main safety functions are safeguarded,
c) identifying and stipulating design accidental loads,
d) establishing requirements for barriers,
e) stipulating operational conditions and restrictions,
f) selecting defined hazard and accident situations.

Emergency preparedness analyses shall be carried out and be part of the basis for making decisions when e.g.

a) defining hazard and accident situations,
b) stipulating performance requirements for the emergency preparedness,
c) selecting and dimensioning emergency preparedness measures.

Norway: *Hazards Analysis:*

Norway: *Risk Acceptance Criteria:*

Working environment analysis C3 S9 Section 18: The responsible party shall carry out necessary analyses to ensure a sound working environment and provide support in the choice of technical, operational and organisational solutions. The analyses shall e.g. contribute to improving the employees' health, welfare and safety and to prevent personal injuries, fatalities and work-related illness as a result of

a) mistakes that can result in hazard and accident situations,
b) exposure and physical or psychological effects.

Canada: *Risk Management*

Management System 5. (1) (2): The management system shall include (*c*) the processes for identifying hazards and for evaluating and managing the associated risks;

Canada: *Risk Analysis/Hazards Analysis*

Management System C5 (2): The management system shall include (*c*) the processes for identifying hazards and for evaluating and managing the associated risks

Management System C8(b, c): The safety plan shall set out the procedures, practices, resources, sequence of key safety-related activities and monitoring measures necessary to ensure the safety of the proposed work or activity and shall include

(*b*) a summary of the studies undertaken to identify hazards and to evaluate safety risks related to the proposed work or activity;

(*c*) a description of the hazards that were identified and the results of the risk evaluation;

Management System C9(b, c): The environmental protection plan shall set out the procedures, practices, resources and monitoring necessary to manage hazards to and protect the environment from the proposed work or activity and shall include

(*b*) a summary of the studies undertaken to identify environmental hazards and to evaluate environmental risks relating to the proposed work or activity;

(*c*) a description of the hazards that were identified and the results of the risk evaluation;

Canada: *Risk Acceptance Criteria*

Management System C8(c): The safety plan shall set out the procedures, practices, resources, sequence of key safety-related activities and monitoring measures necessary to ensure the safety of the proposed work or activity and shall include (*c*) a description of the hazards that were identified and the results of the risk evaluation

Management System C9(c): The environmental protection plan shall set out the procedures, practices, resources and monitoring necessary to manage hazards to and protect the environment from the proposed work or activity and shall include (*c*) a description of the hazards that were identified and the results of the risk evaluation.

Greenland: *Risk Management*

Mineral Resources Act, Part 13, 53 (4): When under this Greenland Parliament Act an enterprise or a person must ensure that environmental risks are identified, assessed and reduced as much as is practically possible, the party concerned must also, as regards the protection of the environment, ensure and promote the use of the best available techniques, including less polluting facilities, machinery, equipment, processes, technologies, raw materials, substances and materials and the best possible measures for the abatement of pollution insofar as this is technically, practically and financially possible for the party concerned; see subsections (1) and (3) and section 52 above.

Mineral Resources Act, Part 13, 53 (5) The rule of subsection (4) above applies equally with regard to the following situations:

(i) When an enterprise or a person must ensure that another party plans and performs work or other activities in a manner so that environmental risks are identified, assessed or reduced

as much as practically possible.

(ii) When an enterprise or a person must ensure supervision of another party planning and performing work or other activities in a manner so that environmental risks are identified, assessed and reduced as much as practically possible.

(iii) When an enterprise or a person must contribute to identify, assess and reduce environmental risks as much as practically possible.

(iv) When an employer or other enterprise or person must ensure that an employee receives the necessary training and instructions in performing the work in a manner so that environmental risks are identified, assessed and reduced as much as practically possible.

(v) When an enterprise or a person must ensure elimination or reduction of environmental risks.

(vi) When an enterprise or a person must ensure the environmental soundness of a facility, a device, a ship or other vessels and the construction, arrangement and equipment, etc. of the object.

Mineral Resources Act, Part 13, 54: The Greenland Government may lay down specific provisions on environmental protection and the matters mentioned in sections 51-53 above, including provisions on the application of national or international rules, agreements or guidelines concerning environmental protection.

Mineral Resources Act, Part 17 *Health and safety on offshore facilities,*79.–(1): The licensee must ensure that health and safety risks in relation to offshore facilities used for exploration, exploitation or transport of hydrocarbons have been identified, assessed and reduced as much as is practically possible.

Mineral Resources Act, 79.–(3): The licensee must ensure that the enterprise that on behalf of the licensee performs or supervises and is in charge of the performance of activities under the licence is given the opportunity to meet the health and safety obligations imposed on the licensee. The licensee must also ensure that the enterprise in question ensures and supervises that the health and safety risks are identified, assessed and reduced as much as is practically possible, and that activities under the licence are performed in accordance with this Greenland Parliament Act, other legislation and provisions laid down in pursuance of the Greenland Parliament Act and other legislation.

EO health and safety statement C6 § 22: The operators undertaking must ensure that for a mobile offshore units draw up a health and safety statement that at a minimum contains:

1) identification of the risks associated with offshore installation, including any activity in connection with this, and which could have serious consequences for workers ' safety and health,

2) assessment of the risks referred to in art. 1,

3) demonstrate that in nr. 1 such risks are reduced as much as is reasonably practicable, including to the maximum and minimum manning requirements for operation of the facility are stated, and to an efficient and controlled evacuation of the offshore installation can take place in critical situations and

4) show that the management system, see. § 20, ensure and demonstrate that the requirements of this Ordinance are complied with in both normal and critical situations.

Greenland: *Risk Analysis*

Environmental Protection MRA 53 (4): See Risk Management

Environmental Protection MRA 53(5) See Risk Management

Health and safety on offshore facilities MRA Part 17, 79.1: See Risk Management

Health and safety on offshore facilities MRA Part 17, 79.3: See Risk Management

Health and Safety Statement 6: § 22. See Risk Management

Risk Assessment EO chapter 8:
§ 28. The operator company needs in connection with the operation of a mobile offshore installations shall ensure that the safety and health risks associated with the activities of the offshore installation is identified, evaluated and reduced as much as is reasonably practicable after the ALARP principle.
Paragraph. 2. The operator company must continuously seek to improve the safety and health protection level through continued reduction referred to in paragraph 1, the security and health risks.

(3). MLSA can guide recommending the use of specific norms and standards such as NORSOK for use for risk assessment of safety and health risks associated with the activities.
(4). Applies the operating officer company a norm or standard as recommended by MLSA in a guide to the operator company usually consider that the notice requirement is opptional

§ 29. Each employer must, before work starts, make sure that the safety and health risks in connection with the work are identified, assessed and reduced as much as is reasonably practicable.

Greenland: *Hazards Analysis*

Health and safety on offshore facilities MRA Part 17, 79.1: See Risk Management and Risk Analysis

Health and safety on offshore facilities MRA Part 17, 79.3: See Risk Management and Risk Analysis

Health and Safety Statement EO chapter 6: § 22. See Risk Management and Risk Analysis

Risk Assessment EO chapter 8 § 29 and § 28: See Risk Analysis

Construction, Layout and Equipment EO chapter 8: § 31. A mobile offshore installations shall be fitted with the equipment necessary for the fulfilment of the purpose of the current Arctic sea

area. The equipment must be located, designed, and could be used in such a way that the safety and health risks after identification and assessment are reduced as much as is reasonably practicable after the ALARP principle.

HSE Assessment DG 1.2: Operators are expected to demonstrate they have a Safety Management System and to describe how safety management, including the co-ordination of the safety management programs of the major contractors, fits within the overall management of the program. The MLSA expects operators to identify all hazards associated with a drilling programme and to ensure that appropriate measures are in place to manage and control the hazards. To identify hazards and manage them operators shall use systematic methodology and log systems such as HAZID, HAZOP and Risk Assessments, ref. NORSOK Standard Z-013 Risk and Emergency Preparedness Assessment.
The hazards which need to be examined include, but are not limited to, are:

- Blowouts
- Uncontrolled releases to sea/air
- Shallow subsurface drilling hazards
- Major accident
- Fires
- Explosions
- Heavy Weather
- Icebergs and Pack Ice
- Loss of Ballast Control
- Loss of Stability
- Helicopter Transportation
- Ship Collisions
- Structural Failure
- Dropped Objects
- H2S
- Man overboard

The following contingency plans must be submitted and presented as a minimum to MLSA for approval:

- Emergency preparedness plan for major accident
- Oil spill and pollution plan
- Relief well drilling plan and programme
- Ice management plan

Greenland: *Risk Acceptance Criteria*

Health and safety on offshore facilities MRA Part 17, 79.1: See Risk Management, Risk Analysis, and Hazard Analysis

Health and safety on offshore facilities MRA Part 17, 79.3: See Risk Management, Risk Analysis, and Hazard Analysis

Risk Assessment EO chapter 8 § 29 and § 28: See Risk Analysis

Construction, Layout and Equipment EO chapter 8: § 31: See Hazards Analysis

Managing Safety and Health Management System for Safety and Health EO C5 §19.7-8):
7) setting the requirements specifications for safety and health, as a minimum, implement legislative requirements,
8) implementation of requirements specifications for nr. 7 and control thereof,

United States: *Risk Management*

SEMS Goals § 250.1901: The goal of your SEMS program is to promote safety and environmental protection by ensuring all personnel aboard a facility are complying with the policies and procedures identified in your SEMS. (a) To accomplish this goal, you must ensure that your SEMS program identifies, addresses, and manages safety, environmental hazards, and impacts during the design, construction, start-up, operation, inspection, and maintenance of all new and existing facilities, including mobile offshore drilling units (MODU) while under BSEE jurisdiction and Department of Interior (DOI) regulated pipelines.

Criteria for Hazards Analyses in the SEMS Program § 250.1911: You must ensure the development and implementation of a hazards analysis (facility level) and a job safety analysis (operations/task level) for all of your facilities. For this subpart, facilities include all types of offshore structures permanently or temporarily attached to the seabed (*i.e.,* mobile offshore drilling units; floating production systems; floating production, storage and offloading facilities; tension-leg platforms; and spars) used for exploration, development, production, and transportation activities for oil, gas, or sulphur from areas leased in the OCS. Facilities also include DOI regulated pipelines.

You must document and maintain current analyses for each operation covered by this section for the life of the operation at the facility. The analyses must be updated when an internal audit is conducted to ensure that it is consistent with the current operations on your facility. Hazards analysis requirements for simple and nearly identical facilities, such as well jackets and single well caissons, may be fulfilled by performing a single hazards analysis which you can apply to all such facilities after you verify that any site specific deviations are addressed in each of the elements of your SEMS program.
(a) Hazards Analysis (facility level). For a hazards analysis (facility level), you must perform an initial hazards analysis on each facility on or before November 15, 2011. The hazards analysis must be appropriate to the complexity of the operation and must identify, evaluate, and manage the hazards involved in the operation.

(1) The hazards analysis must address the following:

(i) Hazards of the operation;

(ii) Previous incidents related to the operation you are evaluating, including any incident in which you were issued an Incident of Noncompliance or a civil or criminal penalty;

(iii) Control technology applicable to the operation your hazards analysis is evaluating; and

(iv) A qualitative evaluation of the possible safety and health effects on employees, and potential impacts to the human and marine environments, which may result if the control technology fails.

(2) The hazards analysis must be performed by a person(s) with experience in the operations being evaluated. These individuals also need to be experienced in the hazards analysis methodologies being employed.

(3) You should assure that the recommendations in the hazards analysis are resolved and that the resolution is documented.

(b) Job Safety Analysis (JSA). You must develop and implement a JSA for OCS activities identified or discussed in your SEMS program.

(1) You must keep a copy of the most recent JSA (operations/task level) at the job site and it must be readily accessible to employees.

(2) Your JSA must identify, analyze, and record:

(i) The steps involved in performing a specific job;

(ii) the existing or potential safety and health hazards associated with each step; and

(iii) the recommended action(s)/procedure(s) that will eliminate or reduce these hazards and the risk of a workplace injury or illness.

(3) The supervisor of the person in charge of the task must approve the JSA prior to the commencement of the work.

Operating Procedures § 250.1913: (a) You must develop and implement written operating procedures that provide instructions for conducting safe and environmentally sound activities involved in each operation addressed in your SEMS program. These procedures must include the job title and reporting relationship of the person or persons responsible for each of the facility's operating areas and address the following:

(8) Properties of, and hazards presented by, the chemicals used in the operations;

(9) Precautions you will take to prevent the exposure of chemicals used in your operations to personnel and the environment. The precautions must include control technology, personal protective equipment, and measures to be taken if physical contact or airborne exposure occurs;

(11) Control of hazardous chemical inventory; and

(12) Impacts to the human and marine environment identified through your hazards analysis.

(d) You must develop and implement safe and environmentally sound work practices for identified hazards during operations and the degree of hazard presented.

United States: *Risk Analysis*

Management's General Responsibilities for the SEMS Program CFR §250.1909 (h);
You, through your management, must require that the program elements discussed in API RP 75 (as incorporated by reference in §250.198) and in this subpart are properly documented and are available at field and office locations, as appropriate for each program element. You, through your management, are responsible for the development, support, continued improvement, and overall success of your SEMS program. Specifically you, through your management, must:

(h) Ensure that management of safety hazards and environmental impacts is an integral part of the design, construction, maintenance, operation, and monitoring of each facility.

Criteria for Hazards Analyses in the SEMS Program §250.1911; See Risk Management

Operating Procedures § 250.1913 (d): You must develop and implement safe and environmentally sound work practices for identified hazards during operations and the degree of hazard presented.

United States: *Hazards Analysis*

Criteria for Hazards Analyses in the SEMS Program § 250.1911: See Risk Management
Operating Procedures § 250.1913 (d) : See Risk Management

United States: *Risk Acceptance Criteria*

Management's General Responsibilities for the SEMS Program CFR §250.1909 (g, h)
(g) Ensure that facilities are designed, constructed, maintained, monitored, and operated in a manner compatible with applicable industry codes, consensus standards, and generally accepted practice as well as in compliance with all applicable governmental regulations.
(h) Ensure that management of safety hazards and environmental impacts is an integral part of the design, construction, maintenance, operation, and monitoring of each facility.

Management of Change

Norway: *Management of Change*

Canada: *Management of Change*

Changes, COGO Act, 5.11 (3): Where the equipment, an installation, the operating procedures or any of the personnel specified in the declaration changes and no longer conforms to the declaration, the holder of the authorization shall provide the National Energy Board with a new declaration as soon as possible after the change occurs.

Greenland: *Management of Change*

Managing Safety and Health Management System for Safety and Health C5 §19.12: If the operator company has chosen to build its management system after another similar system, management system, as a minimum, include management review of the management system in order to ensure its continuing suitability, adequacy and effectiveness

Health and Safety Statement EO C6 § 23: The operating company responsible for a mobile offshore units must ensure that health and safety statement be updated by substantial changes of the plant, its furnishings, equipment or operational conditions.

Drilling Programme Management of Change DG 2.2: Changes concerning safety and other substantial changes such as a major variance in casing setting depth or well TD (greater than +/- 50m), adding or deleting a casing string etc. would need consent from the MLSA, relative to the existing drilling programme, must not take place without prior consent from the MLSA. Alterations to the Drilling Programme shall as a general principle be subject to a risk assessment. In the case of emergencies the drilling programme may be altered without prior consent. In such cases, the MLSA must be notified immediately of the changes and the reason for them.

United States: *Management of Change*

Criteria for management of change in the SEMS program § 250.1912
(a) You must develop and implement written management of change procedures for modifications associated with the following:

(1) Equipment,
(2) Operating procedures,
(3) Personnel changes (including contractors),
(4) Materials, and
(5) Operating conditions.

(b) Management of change procedures do not apply to situations involving replacement in kind (such as, replacement of one component by another component with the same performance capabilities).
(c) You must review all changes prior to their implementation.
(d) The following items must be included in your management of change procedures:

(1) The technical basis for the change;
(2) Impact of the change on safety, health, and the coastal and marine environments;
(3) Necessary time period to implement the change; and
(4) Management approval procedures for the change.

(e) Employees, including contractors whose job tasks will be affected by a change in the operation, must be informed of, and trained in, the change prior to startup of the process or affected part of the operation; and
(f) If a management of change results in a change in the operating procedures of your SEMS program, such changes must be documented and dated.

Training and Competence for Arctic

Norway: *Manning and Competence*

Manning and competence C4 S14: The responsible party shall ensure sufficient manning and competence in all phases of the activities, cf. Section 12 of the Framework Regulations. Minimum requirements will be established for manning and competence to safeguard functions

a) where mistakes may have serious consequences for health, safety or the environment,
b) that reduce the probability of mistakes and hazard and accident situations developing, cf. Sections 4 and 13.

The manning of the various work tasks shall ensure that the personnel are not assigned incompatible tasks.
The assumptions that form the basis for manning and competence shall be followed up.
In the event of manning changes, potential consequences for health, safety and the environment shall be reviewed.
This section's requirements for manning apply to the onshore facilities insofar as they are covered by the scope of the Petroleum Act.

Norway: *Training*

Canada: *Manning and Competence*

Management System Application or Authorization and Well Approvals, COGDPR 5(2)(d): The management system shall include (*d*) the processes for ensuring that personnel are trained and competent to perform their duties

Operator's Duties Part 3, Safety and Environmental Protection, COGDPR 19(l): The operator shall take all reasonable precautions to ensure safety and environmental protection, including ensuring that (*l*) a sufficient number of trained and competent individuals are available to complete the authorized work or activities and to carry out any work or activity safely and without pollution;

Training and Competency Part 10 COGDPR 72: The operator shall ensure that
(*a*) all personnel have, before assuming their duties, the necessary experience, training and qualifications and are able to conduct their duties safely, competently and in compliance with these Regulations; and (*b*) records of the experience, training and qualifications of all personnel are kept and made available to the Board upon request.

Canada: *Training*

Management System Application or Authorization and Well Approvals, COGDPR 5(2)(d): See Manning and Competence.

Operator's Duties Part 3, Safety and Environmental Protection, COGDPR 19(l): See Manning and Competence.

Training and Competency Part 10 COGDPR 72: See Manning and Competence.

Greenland: *Manning and Competence*

Management System for Safety and Health, EO C5 19.4: If the operator company has chosen to build its management system after another similar system, management system, as a minimum, include: management of training and competence, including the definition of the company's requirements therefor, having regard to applicable law,

Health and Safety Statement EO C6 §22.3

The operators undertaking must ensure that for a mobile offshore units draw up a health and safety statement that at a minimum contains: 1) identification of the risks associated with offshore installation, including any activity in connection with this, and which could have serious consequences for workers ' safety and health, (3) demonstrate that in nr. 1 such risks are reduced as much as is reasonably practicable, including to the maximum and minimum manning requirements for operation of the facility are stated, and to an efficient and controlled evacuation of the offshore installation can take place in critical situations

Training, competence EO C10 §35: The operator company must ensure that the staff members prior to the commencement of work is adequately trained to perform tasks after the installation's emergency plan, see. § 34, paragraph 2, and to undertake their own safety in an emergency.

(2). The employer must ensure that the staff are adequately directed and that they possess the competence to ensure that their working capabilities of the offshore installation can be carried out by the safety and health fully defensible,

(3). Persons under 18 years of age may not engage in work on a mobile offshore units.

HSE Assessment DG 1.2: In addition, in line with the Safety Management System the following programmes need to be in place and demonstrable:

- Safety Programmes, such as STOP cards etc
- Permit to Work (PTW) programme
- Evacuation Systems and Programmes
- Maintenance Programmes
- Qualification, Competence and Certification of personnel
- H2S Awareness and Emergency Response Planning

Greenland: *Training*

Management System for Safety and Health, EO C5 19.4: See Manning and Competence

United States: *Manning and Competence*

Management's general responsibilities for the SEMS program, CFR §250.1909 (f, i);
You, through your management, must require that the program elements discussed in API RP 75 (as incorporated by reference in §250.198) and in this subpart are properly documented and are available at field and office locations, as appropriate for each program element. You, through your management, are responsible for the development, support, continued improvement, and overall success of your SEMS program. Specifically you, through your management, must:

(f) Utilize personnel with expertise in identifying safety hazards, environmental impacts, optimizing operations, developing safe work practices, developing training programs and investigating incidents.

(i) Ensure that suitably trained and qualified personnel are employed to carry out all aspects of the SEMS program.

Criteria for hazards analyses in the SEMS program § 250.1911 (2); (a) The hazards analysis must be appropriate to the complexity of the operation and must identify, evaluate, and manage the hazards involved in the operation. (2) The hazards analysis must be performed by a

person(s) with experience in the operations being evaluated. These individuals also need to be experienced in the hazards analysis methodologies being employed.

Criteria for training in the SEMS Program § 250.1915: Your SEMS program must establish and implement a training program so that all personnel are trained to work safely and are aware of environmental considerations offshore, in accordance with their duties and responsibilities. Training must address the operating procedures (§250.1913), the safe work practices (§250.1914), and the emergency response and control measures (§250.1918). You must document the qualifications of your instructors. Your SEMS program must address:

(a) Initial training for the basic well-being of personnel and protection of the environment, and ensure that persons assigned to operate and maintain the facility possess the required knowledge and skills to carry out their duties and responsibilities, including startup and shutdown.

(b) Periodic training to maintain understanding of, and adherence to, the current operating procedures, using periodic drills, to verify adequate retention of the required knowledge and skills.

(c) Communication requirements to ensure that whenever a change is made to operating procedures (§250.1913), the safe work practices (§250.1914), or the emergency response and control measures (§250.1918), personnel will be trained in or otherwise informed of the change before they are expected to operate the facility.

(d) How you will verify that the contractors are trained in the work practices necessary to perform their jobs in a safe and environmentally sound manner, including training on operating procedures (§250.1913), the safe work practices (§250.1914), or the emergency response and control measures (§250.1918).

Criteria for documenting for safe work practices and contractor selection the SEMS program § 250.1914 (b, c [2], d); (b): You must document that your contracted employees are knowledgeable and experienced in the work practices necessary to perform their job in a safe and environmentally sound manner. Documentation of each contracted employee's expertise to perform his/her job and a copy of the contractor's safety policies and procedures must be made available to the operator and BSEE upon request.

(c) Your SEMS program must include procedures and verification for selecting a contractor as follows:

(2) You are responsible for making certain that contractors have the skills and knowledge to perform their assigned duties and are conducting these activities in accordance with the requirements in your SEMS program.

(d) Your SEMS program must include procedures and verification that contractor personnel understand and can perform their assigned duties for activities such as, but not limited to:

(1) Installation, maintenance, or repair of equipment;

(2) Construction, startup, and operation of your facilities;

(3) Turnaround operations;

(4) Major renovation; or

(5) Specialty work.

Criteria for training in the SEMS program § 250.1915 (a, b): Your SEMS program must establish and implement a training program so that all personnel are trained to work safely and are aware of environmental considerations offshore, in accordance with their duties and responsibilities. Training must address the operating procedures (§250.1913), the safe work practices (§250.1914), and the emergency response and control measures (§250.1918). You must document the qualifications of your instructors. Your SEMS program must address:

(a) Initial training for the basic well-being of personnel and protection of the environment, and ensure that persons assigned to operate and maintain the facility possess the required knowledge and skills to carry out their duties and responsibilities, including startup and shutdown.

(b) Periodic training to maintain understanding of, and adherence to, the current operating procedures, using periodic drills, to verify adequate retention of the required knowledge and skills.

Qualifications of an independent third party or designated and qualified personnel § 250.1926;
(a) You must either choose an independent third-party or your designated and qualified personnel to audit your SEMS program. You must take into account the following qualifications when selecting the third-party or your designated and qualified personnel:

(1) Previous education and experience with SEMS, or similar management related programs.

(2) Technical capabilities of the individual or organization for the specific project.

(3) Ability to perform the independent third-party functions for the specific project considering current commitments.

(4) Previous experience with BSEE regulatory requirements and procedures.

(5) Previous education and experience to comprehend and evaluate how the company's offshore activities, raw materials, production methods and equipment, products, byproducts, and business management systems may impact health and safety performance in the workplace.

(b) You must have procedures to avoid conflicts of interest related to the development of your SEMS program and the independent third party auditor and your designated and qualified personnel.
(c) BSEE may evaluate the qualifications of the independent third parties or your designated and qualified personnel. This may include an audit of documents and procedures or interviews. BSEE may disallow audits by a specific independent third-party or your designated and qualified personnel if they do not meet the criteria of this section.

United States: *Training*

Criteria for management of change § 250.1912 (e): See Manning and Competence

Criteria for training in the SEMS Program § 250.1915: See Manning and Competence

Criteria for mechanical integrity for the SEMS program § 250.1916 (b): You must develop and implement written procedures that provide instructions to ensure the mechanical integrity and safe operation of equipment through inspection, testing, and quality assurance. The purpose of mechanical integrity is to ensure that equipment is fit for service. Your mechanical integrity program must encompass all equipment and systems used to prevent or mitigate uncontrolled releases of hydrocarbons, toxic substances, or other materials that may cause environmental or safety consequences. These procedures must address the following: (b) The training of each employee involved in maintaining your equipment and systems so that your employees can implement your mechanical integrity program.

Accountability and Responsibility

Norway: *Accountability for Contractors and all parties:*

Norway: *Identification of the responsible person(s) for system establishment, maintenance and implementation*

Canada: *Accountability for Contractors and all parties:*

Management System Application or Authorization and Well Approvals, COGDPR, 5(2): The management system shall include
(*j*) the arrangements for coordinating the management and operations of the proposed work or activity among the owner of the installation, the contractors, the operator and others, as applicable; and
(*k*) the name and position of the person accountable for the establishment and maintenance of the system and of the person responsible for implementing it.

Canada: *Identification of the responsible person(s) for system establishment, maintenance and implementation*

Management System Application or Authorization and Well Approvals, COGDPR, 5(2)(k): See Accountability for Contractors and all parties.

Greenland: *Accountability for Contractors and all parties*:

Ordinary Duties of Responsibilities Between the Various Types of Companies, EO C2:
§ 4. The copyright holder must ensure that the safety and health risks on and in connection with mobile offshore units are identified, assessed and reduced as much as is reasonably practicable after the ALARP principle.

(2). The copyright holder must ensure that the operator has the ability to meet the security and health obligations incumbent on this.

§ 5. The copyright holder must ensure that supervised the operation of a mobile offshore units are carried out in accordance with råstofloven and this announcement.

§ 6. The operator must make sure that given the necessary instructions of security and health importance to contractors who perform work for this, specifically for the operating company responsible in cases where this is not the operator himself. In addition, the operator must arrange for the supervision of these firms plan and do the work so that the requirements set out in the legislation and this Decree are complied with and that the safety and health risks are identified, assessed and reduced as much as is reasonably practicable after the ALARP principle.

§ 7. The operators undertaking must ensure that given the necessary instructions of security and health importance to contractors who perform work for this. In addition, the operating company responsible for the supervision of these firms plan and do the work so that the safety-and, health risks are identified, assessed and reduced as much as is reasonably practicable after the ALARP principle.

(2). The operator company must ensure that the work to promote safety and health which is being carried out by several different contractors of the offshore installation shall be coordinated and that fixed the head has the opportunity to fulfil the specific obligations on this.

(3). The operator company must ensure that the safety and health risks of the offshore installation is identified, evaluated and reduced as much as is reasonably practicable after the ALARP principle before the installation is put into operation. This applies, mutatis mutandis, after the plant is put into operation.

(4). The operator company must ensure that the equipment before it is put into operation, meeting the requirements of current legislation and this Decree. This applies, mutatis mutandis, after the plant is put into operation.

(5). The operator undertaking must ensure that health and safety risks associated with the use of substances and materials are identified, assessed and reduced as much as is reasonably practicable after the ALARP principle.

§ 8. The contractor shall also ensure that the given instructions after § 7 (1) to contractors who perform work for this. The contractor shall also ensure that the instructions given in accordance with § 7 paragraph 1 is transmitted to the persons who must perform the work.

Responsibilities Within Each Company EO C3:

§ 9. The employer must ensure that the safety and health risks associated with work are identified, assessed and reduced as much as is reasonably practicable after the ALARP principle.

(2). The employer must ensure that supervised the risks referred to in paragraph 1 are identified, assessed and reduced as much as is reasonably practicable after the ALARP principle.

(3). The employer must make employees aware of the safety and health risks that may be associated with their work. Furthermore, the employer shall ensure that employees receive necessary training and instruction in the execution of the work, so that risks are identified, assessed and reduced as much as is reasonably practicable after the ALARP principle.

(4). If circumstances warrant, the employer shall arrange for examinations, tests and inspections, where appropriate by specific experts, in order to ascertain whether the obligations referred to in paragraph 1 are fulfilled.

(5). If there are several employers in the same offshore units, employers shall cooperate on matters of relevance to safety and health. This cooperation shall be established by the operator company, see. § 7, paragraph 3.
(6). The provisions of paragraphs 1 to 5 of the employer's obligations shall also apply to business leaders.

§ 10. The operating company responsible for the mobile offshore units must designate an FA Chief. FA boss has the top safety and health responsibilities of the offshore installation and must ensure that the installation is operated in accordance with existing legislation and this Decree.
(2). Fixed head must ensure that the safety and health risks related to activities at the plant are identified, assessed and reduced as much as is reasonably practicable after the ALARP principle.
(3). Fixed head must ensure that operation, maintenance and modifications of the installation takes place in accordance with the management system referred to in paragraph 15.
(4). Become FA Chief familiar with conditions, which implies a risk of accident, injury or illness, fixed head ensure that the risk is eliminated or reduced as much as is reasonably practicable after the ALARP principle.

§ 11. Other labour leaders must individually contribute to the safety and health risks in connection with the work are identified, assessed and reduced as much as is reasonably practicable after the ALARP principle.
(2). Arbejdslederen becomes aware of facts which involve a risk of accident, injury or illness, the arbejdslederen ensure that risk will be removed or reduced. Can the risk cannot be eliminated or reduced by intervention on the spot, fixed head immediately be made aware of the relationship.

§ 12. The employees must participate in the cooperation on safety and health. Furthermore, the employees contribute to the health and safety environmental risks are identified, assessed and reduced as much as is reasonably practicable after the ALARP principle within their workspace
(2). Are employees aware of the relationship which entails a risk of accident, injury or illness, and which they themselves can correct, they shall inform their supervisor, fixed head or to the employees, representing them in the safety and health conditions.
(3). an employee has the right to leave his place of work or a dangerous area in the event of a serious and immediate safety or health hazard that cannot be avoided.

§ 13. All sailing on a mobile offshore installations shall comply with the procedures which the operator company has set for work and stay at the facility and must respect the measures taken concerning safety and health conditions.

Suppliers etc., EO C4:
§ 14. Machines, machine parts, containers, prefabricated structures, apparatus, appliances, equipment or substances and materials for use in a mobile offshore installations shall comply with recognised norms and standards for offshorevirksomhed in Arctic waters.
(2). Suppliers with further transferring or leaving such objects, must ensure that data sheets as well as instructions for use of the equipment or substances and materials as well

as on equipment maintenance, transportation and erection follows with at time of delivery.

Managing Safety and Health Management System for Safety and Health, C5 § 19(3): If the operator company has chosen to build its management system after another similar system, management system, as a minimum, include: 3) distribution of responsibilities between the individual functions in the part of the company's organization relating to health and safety on offshore installations.

Greenland: *Identification of the responsible person(s) for system establishment, maintenance and implementation*

EO chapters 2, 3, and 4, §19.3: See Accountability for Contractors and all parties

United States: *Accountability for Contractors and all parties*:

Documentation of Safe work Practices and Contractor Selection Criteria in the SEMS Program, § 250.1914; Your SEMS program must establish and implement safe work practices designed to minimize the risks associated with operating, maintenance, and modification activities and the handling of materials and substances that could affect safety or the environment. Your SEMS program must also document contractor selection criteria. When selecting a contractor, you must obtain and evaluate information regarding the contractor's safety and environmental performance. Operators must ensure that contractors have their own written safe work practices. Contractors may adopt appropriate sections of the operator's SEMS program. Operator and contractor must document their agreement on appropriate contractor safety and environmental policies and practices before the contractor begins work at the operator's facilities.

(a) A contractor is anyone performing work for the lessee. However, these requirements do not apply to contractors providing domestic services to the lessee or other contractors. Domestic services include janitorial work, food and beverage service, laundry service, housekeeping, and similar activities.

(b) You must document that your contracted employees are knowledgeable and experienced in the work practices necessary to perform their job in a safe and environmentally sound manner. Documentation of each contracted employee's expertise to perform his/her job and a copy of the contractor's safety policies and procedures must be made available to the operator and BSEE upon request.

(c) Your SEMS program must include procedures and verification for selecting a contractor as follows:

(1) Your SEMS program must have procedures that verify that contractors are conducting their activities in accordance with your SEMS program.

(2) You are responsible for making certain that contractors have the skills and knowledge to perform their assigned duties and are conducting these activities in accordance with the requirements in your SEMS program.

(3) You must make the results of your verification for selecting contractors available to BSEE upon request.

(d) Your SEMS program must include procedures and verification that contractor personnel understand and can perform their assigned duties for activities such as, but not limited to:

(1) Installation, maintenance, or repair of equipment;
(2) Construction, startup, and operation of your facilities;
(3) Turnaround operations;
(4) Major renovation; or
(5) Specialty work.

(e) You must:

(1) Perform periodic evaluations of the performance of contract employees that verifies they are fulfilling their obligations, and
(2) Maintain a contractor employee injury and illness log for 2 years related to the contractor's work in the operation area, and include this information on Form BSEE–0131.

(f) You must inform your contractors of any known hazards at the facility they are working on including, but not limited to fires, explosions, slips, trips, falls, other injuries, and hazards associated with lifting operations.
(g) You must develop and implement safe work practices to control the presence, entrance, and exit of contract employees in operation areas.

Criteria for Mechanical Integrity in the SEMS Program, § 250.1916 (d);
You must develop and implement written procedures that provide instructions to ensure the mechanical integrity and safe operation of equipment through inspection, testing, and quality assurance. The purpose of mechanical integrity is to ensure that equipment is fit for service. Your mechanical integrity program must encompass all equipment and systems used to prevent or mitigate uncontrolled releases of hydrocarbons, toxic substances, or other materials that may cause environmental or safety consequences. These procedures must address the following:
(d) The documentation of each inspection and test that has been performed on your equipment and systems. This documentation must identify the date of the inspection or test; include the name and position, and the signature of the person who performed the inspection or test; include the serial number or other identifier of the equipment on which the inspection or test was performed; include a description of the inspection or test performed; and the results of the inspection test.

Verification of the SEMS program effectiveness, § 250.1924:
(a) BSEE or its authorized representative may evaluate or visit your facility to determine whether your SEMS program is in place, addresses all required elements, and is effective in protecting the safety and health of workers, the environment, and preventing incidents. BSEE or its authorized representative may evaluate your SEMS program, including documentation of contractors, independent third parties, your designated and qualified personnel, and audit reports, to assess your SEMS program. These evaluations or visits may be random or based upon the OCS lease operator's or contractor's performance.
(b) For the evaluations, you must make the following available to BSEE upon request:

(1) Your SEMS program;
(2) The qualifications of your independent third-party or your designated and qualified personnel;

(3) The SEMS audits conducted of your program;
(4) Documents or information relevant to whether you have addressed and corrected the deficiencies of your audit; and
(5) Other relevant documents or information.
(c) During the site visit BSEE may verify that:
(1) Personnel are following your SEMS program,
(2) You can explain and demonstrate the procedures and policies included in your SEMS program; and
(3) You can produce evidence to support the implementation of your SEMS program.
(d) Representatives from BSEE may observe or participate in your SEMS audit. You must notify the BSEE at least 30 days prior to conducting your audit as required in §250.1920, so that BSEE may make arrangements to observe or participate in the audit.

Conducting Additional Audits § 250.1925;
(a) If BSEE identifies safety or non-compliance concerns based on the results of our inspections and evaluations, or as a result of an event, BSEE may direct you to have an independent third-party audit of your SEMS program, in addition to the regular audit required by §250.1920, or BSEE may conduct an audit.
(1) If BSEE direct you to have an independent third-party audit,
(i) You are responsible for all of the costs associated with the audit, and
(ii) The independent third-party audit must meet the requirements of §250.1920 of this part and you must ensure that the independent third party submits the findings and conclusions of a BSEE-directed audit according to the requirements in §250.1920 to BSEE within 30 days after the audit is completed.
(2) If BSEE conducts the audit, BSEE will provide a report of the findings and conclusions within 30 days of the audit.
(b) Findings from these audits may result in enforcement actions as identified in §250.1927.
(c) You must provide the BSEE a copy of your plan for addressing the deficiencies identified in the BSEE-directed audit within 30 days of completion of the audit as required in §250.1920.

United States: *Identification of the responsible person(s) for system establishment, maintenance and implementation*

Management's general responsibilities for the SEMS program, §250.1909 (b, c): You, through your management, must require that the program elements discussed in API RP 75 (as incorporated by reference in §250.198) and in this subpart are properly documented and are available at field and office locations, as appropriate for each program element. You, through your management, are responsible for the development, support, continued improvement, and overall success of your SEMS program. Specifically you, through your management, must:
(b) Appoint management representatives who are responsible for establishing, implementing and maintaining an effective SEMS program.
(c) Designate specific management representatives who are responsible for reporting to management on the performance of the SEMS program.

Hazards Analysis, §250.1911 (2, 3);
(2) The hazards analysis must be performed by a person(s) with experience in the operations being evaluated. These individuals also need to be experienced in the hazards analysis methodologies being employed.
(3) You should assure that the recommendations in the hazards analysis are resolved and that the resolution is documented.

Auditing Requirements for the SEMS Program, § 250.1920 (d [2]): You must provide the BSEE a copy of your plan for addressing the deficiencies identified in your audit within 30 days of completion of the audit. Your plan must address the following:
(2) The person responsible for correcting each identified deficiency, including their job title.

Operating Procedures/Work Processes

Norway: *Operating Procedures/Work Processes*

Work processes C4 S13: Section 13:
The responsible party shall ensure that the work processes and the resulting products fulfil the requirements related to health, safety and the environment.
The interaction between human, technological and organisational factors shall be safeguarded in the work processes.
Work processes and associated interfaces of significance to health, safety and the environment shall be described. The level of detail in the description shall be adapted to the importance of the process for health, safety and the environment.

Canada: *Operating Procedures/Work Processes*

Management System, Application for Authorization Part 2 (6): The application for authorization shall be accompanied by
(*a*) a description of the scope of the proposed activities;
(*b*) an execution plan and schedule for undertaking those activities;
(*c*) a safety plan that meets the requirements of section 8;
(*d*) an environmental protection plan that meets the requirements of section 9;
(*e*) information on any proposed flaring or venting of gas, including the rationale and the estimated rate, quantity and period of the flaring or venting;
(*f*) information on any proposed burning of oil, including the rationale and the estimated quantity of oil proposed to be burned;
(*g*) in the case of a drilling installation, a description of the drilling and well control equipment;
(*h*) in the case of a production installation, a description of the processing facilities and control system;
(*i*) in the case of a production project, a field data acquisition program that allows sufficient pool pressure measurements, fluid samples, cased hole logs and formation flow tests for a comprehensive assessment of the performance of development wells, pool depletion schemes and the field;

(*j*) contingency plans, including emergency response procedures, to mitigate the effects of any reasonably foreseeable event that might compromise safety or environmental protection, which shall

(i) provide for coordination measures with any relevant municipal, provincial, territorial or federal
emergency response plan, and

(ii) in an offshore area where oil is reasonably expected to be encountered, identify the scope and frequency of the field practice exercise of oil spill countermeasures; and

(*k*) a description of the decommissioning and abandonment of the site, including methods for restoration of the site after its abandonment.

Management System, Application for Authorization Part 2 (8): The safety plan shall set out the procedures, practices, resources, sequence of key safety-related activities and monitoring measures necessary to ensure the safety of the proposed work or activity and shall include
(*a*) a summary of and references to the management system that demonstrate how it will be applied to the proposed work or activity and how the duties set out in these Regulations with regard to safety will be fulfilled;
(*b*) a summary of the studies undertaken to identify hazards and to evaluate safety risks related to the proposed work or activity;
(*c*) a description of the hazards that were identified and the results of the risk evaluation;
(*d*) a summary of the measures to avoid, prevent, reduce and manage safety risks;
(*e*) a list of all structures, facilities, equipment and systems critical to safety and a summary of the system in place for their inspection, testing and maintenance;
(*f*) a description of the organizational structure for the proposed work or activity and the command structure on the installation, which clearly explains

(i) their relationship to each other, and

(ii) the contact information and position of the person accountable for the safety plan and of the person responsible for implementing it;

(*g*) if the possibility of pack sea ice, drifting icebergs or land-fast sea ice exists at the drill or production site, the measures to address the protection of the installation, including systems for ice detection, surveillance, data collection, reporting, forecasting and, if appropriate, ice avoidance or deflection; and
(*h*) a description of the arrangements for monitoring compliance with the plan and for measuring performance in relation to its objectives.

Management System, Application for Authorization Part 2 (9): The environmental protection plan shall set out the procedures, practices, resources and monitoring necessary to manage hazards to and protect the environment from the proposed work or activity and shall include
(*a*) a summary of and references to the management system that demonstrate how it will be applied to the proposed work or activity and how the duties set out in these Regulations with regard to environmental protection will be fulfilled;
(*b*) a summary of the studies undertaken to identify environmental hazards and to evaluate environmental risks relating to the proposed work or activity;
(*c*) a description of the hazards that were identified and the results of the risk evaluation;
(*d*) a summary of the measures to avoid, prevent, reduce and manage environmental risks;

(*e*) a list of all structures, facilities, equipment and systems critical to environmental protection and a of the system in place for their inspection, testing and maintenance;
(*f*) a description of the organizational structure for the proposed work or activity and the command structure on the installation, which clearly explains
(i) their relationship to each other, and
(ii) the contact information and position of the person accountable for the environmental protection plan and the person responsible for implementing it;
(*g*) the procedures for the selection, evaluation and use of chemical substances including process chemicals and drilling fluid ingredients;
(*h*) a description of equipment and procedures for the treatment, handling and disposal of waste material;
(*i*) a description of all discharge streams and limits for any discharge into the natural environment including any waste material;
(*j*) a description of the system for monitoring compliance with the discharge limits identified in paragraph
(*i*), including the sampling and analytical program to determine if those discharges are within the specified limits; and
(*k*) a description of the arrangements for monitoring compliance with the plan and for measuring performance in relation to its objectives.

Equipment and Operations: Drilling Practices, Part 4, 30: The operator shall ensure that adequate equipment, procedures and personnel are in place to recognize and control normal and abnormal pressures, to allow for safe, controlled drilling operations and to prevent pollution.

Note: Canada has extensive rules on specific operating procedures in
Part 4 Equipment and Operations
Drilling Fluid System
Marine Riser 29
Reference for Well Depths 31
Directional and Deviation Surveys 32
Formation Leak-Off Test 33
Formation Flow and Well Testing Equipment 34-38
Casing and Cementing 39-41 (41 (*D*) The Integrity of Gas Hydrate and Permafrost Zones — and, In The Case of an Onshore Well, Potable Water Zones — is Protected.)
Waiting on Cement Time 42
Casing Pressure Testing 43
Production Tubing 44
Monitoring and Control Of Process Operations 45
Well Completion 46
Subsurface Safety Valve 47 ((2) If a development well is located in a zone where permafrost is present in unconsolidated sediments, the operator shall ensure that a subsurface safety valve is installed in the tubing below the base of the permafrost.)

PART 5 Evaluation of Wells, Pools and Fields
General 49-50
Testing and Sampling of Formations 51
Formation Flow Testing 52

Greenland: *Operating Procedures/Work Processes*

HSE Assessment DG 1.2: See Hazards Analysis

Drilling Operations DG 5:

5.1 Drilling operations shall be conducted in accordance with the NORSOK Standard D-010 Well Integrity in Drilling and Well Operations. During drilling operations, all necessary steps shall be taken to prevent explosion, blowouts, pollution, or other damage. Safety related equipment shall be installed as drilling operations progress and shall comply with the following requirements. Apart from possible drilling when setting the conductor pipe and surface casing, drilling must not be carried out before blowout preventers/diverter system and related equipment have been installed and tested.

5.2 The well must be cased. The casing shoes shall - with due consideration of geological conditions - be set at depths sufficient to ensure complete control of the well at all times.

a) Conductor pipe (casing) shall be set at such a depth below seabed that unconsolidated formations are supported and a stable hole ensured for initial drilling operations. Cement must be to seabed and a means of top filling annulus must be provided.

b) Surface casing shall be installed in such a manner to provide a good anchorage for the subsea wellhead and support of the blow-out preventers. Surface casing shall be cemented to seabed. After running and installation of the BOPs and riser, all rams and connections shall be function and pressure tested to pressures approved by the MLSA and following internationally accepted procedures.

c) Intermediate casing shall be installed and cemented in such a way that full control of the well is maintained at all times. The cementing and centralization programmes shall endeavour to secure that all zones containing hydrocarbons as well as all intervals with abnormal pressures are isolated. Prior to drilling out from intermediate and subsequent casings, a complete blow-out preventer function and pressure test will be conducted to pressures approved by the MLSA and following internationally accepted procedures.

d) Production casing must be cemented as stipulated as above for the intermediate casing.

e) A liner must be cemented over its full length. When placing and cementing the liner, consideration shall be given to the best possible isolation of hydrocarbon bearing and/or abnormally pressured zones.

5.3 The use of cement bond log or temperature survey must be run when critical tops of cement (TOCs) are required for intermediate and production casing isolation. The cementation of production casing and liners must be checked with cement bond logging in situations where the cement job is suspect.

5.4 Casing strings shall be of such a diameter, weight and grade, as well as designed and installed in such a way that they can withstand any mechanical and chemical influence which may be expected in the well during drilling, testing, and stimulation.

5.5 After the casing strings have been installed and cemented, they shall be pressure tested in accordance with the approved drilling programme. For each casing the pressure test shall be adapted to the internal pressure to which the casing may be exposed.

5.6 The installation of used casings is not permitted unless these have been adequately tested and inspected in advance by an independent inspection company and satisfactory strength of pipes and connections can be documented.

5.7 Pressure testing of the formation strength below the casing shoe shall be performed in accordance with the approved drilling programme.
5.8 It must be possible to handle drilling fluid loss or to increase the fluid density without delay. During routine operations sufficient spare amounts of mud mixing materials must therefore be stocked on the platform/well site. Furthermore a sufficient stock of chemicals for handling possible hydrogen sulphide must be available (if hydrogen sulphide is expected).
5.9 Before the drill string is pulled out of the hole the well shall be observed and found to be stable. During tripping the well shall be monitored carefully for fluid loss/gain.
5.10 During drilling, the drilling fluid reconditioning equipment shall be used to the necessary extent to separate gas and cuttings from the fluid.
5.11 The density of the drilling fluid shall be tested regularly and at least every hour.
5.12 Oil based mud or mud containing chemicals which can be particularly detrimental to the health or environment, can only be utilised when approval is given by the MLSA, (approval by other authorities may also be necessary).
5.13 The disassembly or other maintenance of blow-out preventers may take place only when the well is secured against blow-out by a minimum of 2 independent and tested barriers, accepted by the MLSA in general or specifically.
5.14 Every 14 day pressure or operational testing of the blow-out preventers and connected pressure control equipment shall be carried out and after disassembly, as well as when drilling operations or other conditions make it reasonable. Providing the equipment configuration is such designed, the BOP Control System (or parts of it) shall be tested every 7 days.
5.15 The hydrostatic pressure in the well may only in connection with testing be reduced to such a level that the formation fluid can flow to the borehole.
5.16 During drilling operations the Licensee is required at all times and with necessary accuracy to keep track of the well trajectory. Measurements which determine inclination and azimuth shall be taken at intervals securing the necessary knowledge of the well course. For deviated wells the measurements shall be taken at intervals not exceeding 100 m, while bigger intervals and possibly omission of azimuth determination can be accepted in the case of almost vertical wells. Such measurements shall be carried out while drilling below the surface casing or from another specified depth approved or required by the MLSA.

United States: *Operating Procedures/Work Processes*

Management's General Responsibilities for the SEMS Program, §250.1909 (g); Specifically you, through your management, must: Ensure that facilities are designed, constructed, maintained, monitored, and operated in a manner compatible with applicable industry codes, consensus standards, and generally accepted practice as well as in compliance with all applicable governmental regulations.

- *Criteria for management of change in the SEMS program*, § 250.1912 (a, 2): You must develop and implement written management of change procedures for modifications associated with the following: (2) Operating procedures,

- *Criteria for Operating Procedures for the SEMS Program*, § 250.1913;

(a) You must develop and implement written operating procedures that provide instructions for conducting safe and environmentally sound activities involved in each operation addressed in

your SEMS program. These procedures must include the job title and reporting relationship of the person or persons responsible for each of the facility's operating areas and address the following:

(1) Initial startup;
(2) Normal operations;
(3) All emergency operations (including but not limited to medical evacuations, weather-related evacuations and emergency shutdown operations);
(4) Normal shutdown;
(5) Startup following a turnaround, or after an emergency shutdown;
(6) Bypassing and flagging out-of-service equipment;
(7) Safety and environmental consequences of deviating from your equipment operating limits and steps required to correct or avoid this deviation;
(8) Properties of, and hazards presented by, the chemicals used in the operations;
(9) Precautions you will take to prevent the exposure of chemicals used in your operations to personnel and the environment. The precautions must include control technology, personal protective equipment, and measures to be taken if physical contact or airborne exposure occurs;
(10) Raw materials used in your operations and the quality control procedures you used in purchasing these raw materials;
(11) Control of hazardous chemical inventory; and
(12) Impacts to the human and marine environment identified through your hazards analysis.

(b) Operating procedures must be accessible to all employees involved in the operations.
(c) Operating procedures must be reviewed at the conclusion of specified periods and as often as necessary to assure they reflect current and actual operating practices, including any changes made to your operations.
(d) You must develop and implement safe and environmentally sound work practices for identified hazards during operations and the degree of hazard presented.
(e) Review of and changes to the procedures must be documented and communicated to responsible personnel.

Criteria for Documentation of Safe Work Practices and Contractor Selection for the SEMS program, § 250.1914 (f, g);
(f) You must inform your contractors of any known hazards at the facility they are working on including, but not limited to fires, explosions, slips, trips, falls, other injuries, and hazards associated with lifting operations.
(g) You must develop and implement safe work practices to control the presence, entrance, and exit of contract employees in operation areas.

Criteria for Training in the SEMS Program, § 250.1915 (a, b, c): Your SEMS program must establish and implement a training program so that all personnel are trained to work safely and are aware of environmental considerations offshore, in accordance with their duties and responsibilities. Training must address the operating procedures (§250.1913), the safe work practices (§250.1914), and the emergency response and control measures (§250.1918). You must document the qualifications of your instructors. Your SEMS program must address:

(a) Initial training for the basic well-being of personnel and protection of the environment, and ensure that persons assigned to operate and maintain the facility possess the required knowledge and skills to carry out their duties and responsibilities, including startup and shutdown.
(b) Periodic training to maintain understanding of, and adherence to, the current operating procedures, using periodic drills, to verify adequate retention of the required knowledge and skills.
(c) Communication requirements to ensure that whenever a change is made to operating procedures (§250.1913), the safe work practices (§250.1914), or the emergency response and control measures (§250.1918), personnel will be trained in or otherwise informed of the change before they are expected to operate the facility.

Quality Assurance/Mechanical Integrity

Norway: *Mechanical integrity:*

Canada: *Mechanical integrity:*

Management System, Part 2 5(2)(e): …the processes for ensuring and maintaining the integrity of all facilities, structures, installations, support craft and equipment necessary to ensure safety, environmental protection and waste prevention;

Management System, Part 2 (8)(e): …a list of all structures, facilities, equipment and systems critical to safety and a summary of the system in place for their inspection, testing and maintenance;

Management System, Part 2 (9)(e): …a list of all structures, facilities, equipment and systems critical to environmental protection and a of the system in place for their inspection, testing and maintenance;

Equipment and Operations: Wells, Installations, Equipment, Facilities and Support Craft, Part 4 (25-27):
25. The operator shall ensure that
(*a*) all wells, installations, equipment and facilities are designed, constructed, tested, maintained and operated to prevent incidents and waste under the maximum load conditions that may be reasonably anticipated during any operation;
(*b*) a comprehensive inspection that includes a nondestructive examination of critical joints and structural members of an installation and any critical drilling or production equipment is made at an interval to ensure continued safe operation of the installation or equipment and in any case, at least once in every five-year period; and
(*c*) records of maintenance, tests and inspections are kept.
26. The operator shall ensure that
(*a*) the components of an installation and well tubulars, Christmas trees and wellheads are operated in accordance with good engineering practices; and

(*b*) any part of an installation that may be exposed to a sour environment is designed, constructed and maintained to operate safely in that environment.

27. (1) The operator shall ensure that any defect in the installation, equipment, facilities and support craft that may be a hazard to safety or the environment is rectified without delay
(2) If it is not possible to rectify the defect without delay, the operator shall ensure that it is rectified as soon as the circumstances permit and that mitigation measures are put in place to minimize the hazards while the defect is being rectified.

Measurements, Testing: Maintenance and Notification Part 7, 62:

62. The operator shall ensure

(*a*) that meters and associated equipment are calibrated and maintained to ensure their continued accuracy;

(*b*) that equipment used to calibrate the flow system is calibrated in accordance with good measurement practices;

(*c*) that any component of the flow system that may have an impact on the accuracy or integrity of the flow system and that is not functioning in accordance with the manufacturer's specifications is repaired or replaced without delay, or, if it is not possible to do so without delay, corrective measures are taken to minimize the impact on the accuracy and integrity of the
flow system while the repair or replacement is proceeding; and

(*d*) that a conservation officer is notified, as soon as the circumstances permit, of any malfunction or failure of any flow system component that may have an impact on the accuracy of the flow system and of the corrective measures taken.

Greenland: *Mechanical integrity:*

Construction, Layout and Equipment, EO §§30-33:

§ 30. Construction of mobile offshore units with associated systems and equipment must be based on the best, established international practices, technology and standards after the BAT principle, which is applicable in the current Arctic sea area.

§ 31. A mobile offshore installations shall be fitted with the equipment necessary for the fulfilment of the purpose of the current Arctic sea area. The equipment must be located, designed, and could be used in such a way that the safety and health risks after identification and assessment are reduced as much as is reasonably practicable after the ALARP principle.

§ 32. Ongoing maintenance should be done in such a way as to mobile offshore units and its equipment comply with safety and health requirements laid down in this Ordinance or in other regulations laid down by Naalakkersuisut in the field or recommended by MLSA in a guide

§ 33. Recognised norms and standards, which have safety and health significance, to be followed in connection with in §§ 31-33 of the relationship.

(2). Mobile offshore installations shall meet all the relevant IMO requirements.

(3). Mobile offshore units used for drilling, must at least comply with the requirements specified in IMO, MOBILE OFFSHORE DRILLING UNIT Code.

(4). International decisions by notice area and regulations laid down by recognised classification societies, etc. must be followed regardless of whether the absence of Danish and Greenlandic.
(5). Derogation of norms and standards, in accordance with paragraph 1, paragraph 2, paragraph 3 and paragraph 4 can be done with the Raw DNA's approval in cases where appropriate in order to achieve a higher safety or health protection, or as a result of technical progress.
(6). MLSA can guide recommending the use of specific norms and standards such as NORSOK to meet the notice requirements for compliance with the BAT principle

Drilling Operations DG 5: See Operating Procedures/Work Processes

United States: *Mechanical integrity:*

Criteria for Mechanical Integrity in the SEMS Program § 250.1916: You must develop and implement written procedures that provide instructions to ensure the mechanical integrity and safe operation of equipment through inspection, testing, and quality assurance. The purpose of mechanical integrity is to ensure that equipment is fit for service. Your mechanical integrity program must encompass all equipment and systems used to prevent or mitigate uncontrolled releases of hydrocarbons, toxic substances, or other materials that may cause environmental or safety consequences. These procedures must address the following:

(a) The design, procurement, fabrication, installation, calibration, and maintenance of your equipment and systems in accordance with the manufacturer's design and material specifications.
(b) The training of each employee involved in maintaining your equipment and systems so that your employees can implement your mechanical integrity program.
(c) The frequency of inspections and tests of your equipment and systems. The frequency of inspections and tests must be in accordance with BSEE regulations and meet the manufacturer's recommendations. Inspections and tests can be performed more frequently if determined to be necessary by prior operating experience.
(d) The documentation of each inspection and test that has been performed on your equipment and systems. This documentation must identify the date of the inspection or test; include the name and position, and the signature of the person who performed the inspection or test; include the serial number or other identifier of the equipment on which the inspection or test was performed; include a description of the inspection or test performed; and the results of the inspection test.
(e) The correction of deficiencies associated with equipment and systems that are outside the manufacturer's recommended limits. Such corrections must be made before further use of the equipment and system.
(f) The installation of new equipment and constructing systems. The procedures must address the application for which they will be used.
(g) The modification of existing equipment and systems. The procedures must ensure that they are modified for the application for which they will be used.
(h) The verification that inspections and tests are being performed. The procedures must be appropriate to ensure that equipment and systems are installed consistent with design specifications and the manufacturer's instructions.

(i) The assurance that maintenance materials, spare parts, and equipment are suitable for the applications for which they will be used.

Documentation and Reporting

Norway: *Collection, processing and use of data*

Collection, processing and use of data, C6 S19: The responsible party shall ensure that data of significance to health, safety and the environment are collected, processed and used for
a) monitoring and checking technical, operational and organisational factors,
b) preparing measurement parameters, indicators and statistics,

Retention of material and information C9 S42;
Material and information pursuant to Section 24 shall be retained for as long as necessary in consideration of prudent operations. In particular,
a) anyone carrying out underwater contractor activities, shall retain the operation log from manned underwater operations for 40 years from the last entry,
b) the operator or the party responsible for operating a facility shall retain meteorological and oceanographic data until they have been submitted to the Norwegian Meteorological Institute,
c) the operator shall retain material and information on permanent plugback of wells,
d) the operator shall retain material and information on facilities and waste that have been temporarily abandoned on the seabed,
e) the operator shall retain material and information on acute pollution and measures against acute pollution with associated follow-up study,
f) the operator shall retain material and information on environmental monitoring,
g) the operator shall retain material and information on discharges of oil and on consumption and discharges of chemicals,
h) the responsible party shall retain material and information on hazard and accident situations, as well as any serious near misses,
i) the operator and the employer shall retain mapping results that document to what extent employees have been exposed to potential hazardous working environment factors. The period of retention shall be in proportion to the assumed hazardous long-term effects of the exposure.
At the time of expiration or surrender of the production license and specific permission to install and operate facilities according to Section 4-3 of the Petroleum Act, the party obligated to carry out the disposal decision according to Section 5-3 of the Petroleum Act, is responsible for retaining material and information as mentioned in first subsection.

In the cessation plan, the licensee shall account for the material and information the operator shall retain after the disposal decision has been carried out.

When the petroleum activities are terminated, the supervisory authorities can order that material and information as mentioned in the first subsection, be handed over.
Material and information that are not to be retained or handed over according to the first through fourth subsections, may be discarded and destroyed.

Norway: *Information requirements*

Information C4 S15:
The responsible party shall identify the information necessary to plan and carry out the activities and improve health, safety and the environment.

It shall be ensured that the necessary information is acquired, processed and communicated to relevant users at the right time.

Information and communication systems shall be established that safeguard the need for acquiring, processing and communicating data and information.

Information on Monitoring, Emissions, Discharges and Risk of Pollution C9 S34:
The operator shall submit the following material and information to the Climate and Pollution Agency:
a) results from monitoring of the external environment as mentioned in Chapter X of the Activities Regulations. The results from the monitoring as mentioned in Section 54, second subsection and Sections 55 and 56 of the Activities Regulations, shall be submitted in accordance with the Guidelines for environmental monitoring of the petroleum activities on the Norwegian continental shelf. Other monitoring results shall be submitted as soon as they become available,
b) information on changes in the risk of pollution. The information shall include the reasons for the change and remedial measures implemented,
c) report on annual emissions and discharges in accordance with the Climate and Pollution Agency's Guidelines for reporting from offshore petroleum activities. The reporting shall take place using ”EnvironmentWeb” (EW). The report and the underlying data shall be entered in EW by 1 March of the following year,
d) the results from the risk and emergency preparedness analyses as mentioned in Section 73 of the Activities Regulations, as well as a description, based on the conducted environmental risk and emergency preparedness analyses, of how the planned emergency preparedness for acute pollution will be safeguarded.

Reporting from manned underwater operations, C9 S35:
The operator shall submit an activity report regarding manned underwater operations from facilities or vessels to the Petroleum Safety Authority Norway. The report shall be submitted no later than 14 days after the end of every half year.

The operator shall also submit an experience report to the Petroleum Safety Authority Norway at the end of each calendar year or at the completion of a manned underwater operation.

Programme for and information on drilling and well activities, C9 S37:
The responsible party shall ensure that the programme for and information on drilling and well activities are submitted to the Petroleum Safety Authority Norway in accordance with deadlines stipulated by the Petroleum Safety Authority Norway.

Reporting drilling and well activities, C9 S38:
The operator shall report drilling and well activities to the Petroleum Safety Authority Norway's and the Norwegian Petroleum Directorate's database.

The reporting shall use the well and wellbore terminology as well as the classification as mentioned in Section 10 of the Regulations of 18 June 2001 No. 749 relating to resource management in the petroleum activities. (in Norwegian only)

Material and information to be sent to other institutions, C9 S40:
The operator shall ensure that
a) results from preliminary surveys (route surveys) as mentioned in Section 15 of the Activities Regulations are submitted to the Norwegian Hydrographic Service,
b) samples from preliminary surveys as mentioned in Section 15 of the Activities Regulations, that show the condition of the seabed, are offered to the Geological Survey of Norway when the laboratory work on these samples is complete,
c) information on the location of permanently placed and mobile facilities as mentioned in Section 47 of the Framework Regulations, as well as temporarily secured and abandoned wells as mentioned in Section 88 of the Activities Regulations, is submitted 'Notifications to Seafarers' ("Etterretninger for sjøfarende") and the fishery publications, and that a copy is sent to the Petroleum Safety Authority Norway,
d) placing at sea and removal of navigation markers are announced beforehand in 'Notifications to Seafarers',
e) establishment and cancellation of safety zones as mentioned in Chapter VIII of the Framework Regulations, are announced in 'Notifications to Seafarers' and in the fishery publications,
f) meteorological and oceanographic data with reports on the quality of data as mentioned in Section 17 of the Facilities Regulations, as well as annual reports on data collection are submitted to the Norwegian Meteorological Institute, and that such reports on oceanographic data are submitted to the Institute of Marine Research,
g) seismological data as mentioned in Section 17 of the Facilities Regulations, are submitted to the Institute of Solid Earth Physics or NORSAR,
h) information on marking of facilities as mentioned in Section 71 of the Facilities Regulations, is submitted to the Norwegian Coastal Administration,
i) the plan for implementing acute pollution measures are submitted to the Norwegian Coastal Administration.

Retention of material and information, C9 S42:
Material and information pursuant to Section 24 shall be retained for as long as necessary in consideration of prudent operations. In particular,
a) anyone carrying out underwater contractor activities, shall retain the operation log from manned underwater operations for 40 years from the last entry,
b) the operator or the party responsible for operating a facility shall retain meteorological and oceanographic data until they have been submitted to the Norwegian Meteorological Institute,
c) the operator shall retain material and information on permanent plugback of wells,

d) the operator shall retain material and information on facilities and waste that have been temporarily abandoned on the seabed,
e) the operator shall retain material and information on acute pollution and measures against acute pollution with associated follow-up study,
f) the operator shall retain material and information on environmental monitoring,
g) the operator shall retain material and information on discharges of oil and on consumption and discharges of chemicals,
h) the responsible party shall retain material and information on hazard and accident situations, as well as any serious near misses,
i) the operator and the employer shall retain mapping results that document to what extent employees have been exposed to potential hazardous working environment factors. The period of retention shall be in proportion to the assumed hazardous long-term effects of the exposure.

At the time of expiration or surrender of the production license and specific permission to install and operate facilities according to Section 4-3 of the Petroleum Act, the party obligated to carry out the disposal decision according to Section 5-3 of the Petroleum Act, is responsible for retaining material and information as mentioned in first subsection.

In the cessation plan, the licensee shall account for the material and information the operator shall retain after the disposal decision has been carried out.

When the petroleum activities are terminated, the supervisory authorities can order that material and information as mentioned in the first subsection, be handed over.

Material and information that are not to be retained or handed over according to the first through fourth subsections, may be discarded and destroyed.

Norway: *Reporting, review and investigation of hazards and accidents*

Registration, review and investigation of hazard and accident situations, C6 S20: The responsible party shall ensure that hazard and accident situations that have occurred and that may lead to or have led to acute pollution or other harm, are recorded and examined in order to prevent recurrence.

Situations that occur frequently or that have great actual or potential consequences, shall be investigated.

Criteria shall be set for which situations that must be registered, examined and investigated, and requirements shall be set for scope and organisation.

The operator shall have a comprehensive overview of hazard and accident situations that have occurred.

Notification and reporting of hazard and accident situations to the supervisory authorities, C8 S29:

The operator shall ensure coordinated and immediate notification via telephone to the Petroleum Safety Authority Norway in the event of hazard and accident situations that have led to, or under slightly altered circumstances could have led to

a) death,
b) serious and acute injury,
c) acute life-threatening illness,
d) serious impairment or discontinuance of safety functions or other barriers, so that the integrity of the offshore or onshore facility is threatened,
e) acute pollution.

The notification shall be confirmed in writing.

Acute pollution or the risk of acute pollution on or from onshore facilities shall also be reported in accordance with the Regulations of 9 July 1992 No. 1269 relating to notification of acute pollution, etc (in Norwegian only).

In the event of hazard and accident situations as mentioned in the first subsection, litera b through e, but of a less serious or less acute nature, the operator shall submit individual written notification to the Petroleum Safety Authority Norway on the first workday after the situation took place or was discovered.

Information on follow-up of hazard and accident situations, C8 S30:
Until situations as mentioned in Section 29, first and third subsections regarding notification of serious or acute hazard and accident situations are normalised, the operator shall keep the supervisory authorities continuously updated on the development, and of the measures it plans to implement.

Before the normalisation is concluded following serious or acute hazard and accident situations, the supervisory authorities shall be notified.

The supervisory authorities shall be notified if, after the normalisation, information comes to light that shows that the hazard and accident situation was more serious than previously reported.
In the event of measures against acute pollution from facilities and offshore vessels, the operator shall ensure that the action plan as mentioned in Section 79 of the Activities Regulations, is submitted to the Norwegian Coastal Administration.

Reporting accidents involving death or injury, C8 S31:
In the event of accidents in the enterprise, the employer or the party representing the employer onsite, shall submit written notification to the Petroleum Safety Authority Norway on the specified form for accidents that have resulted in

a) death,
b) serious personal injury,
c) disability resulting in absence,
d) medical treatment.

For persons under elevated atmospheric ambient pressure, written notification shall also be submitted for personal injuries requiring first aid.

The principal undertaking and the operator shall receive a copy of the notification the individual employer has submitted to the authorities.

Notification of possible work-related illness, C8 S32:
Any physician who, in a professional capacity, acquires knowledge that an employee may be suffering from a work-related illness, shall notify the Petroleum Safety Authority Norway in writing, cf. Section 5-3 of the Working Environment Act.

Employees who are of the opinion that they suffer from a work-related illness, shall notify their employer or the party representing their employer. If the employee consents, the employer shall further report such cases to health personnel in his/her own enterprise. The health personnel shall carry out a professional evaluation and, if relevant, notify the Petroleum Safety Authority Norway. The health personnel shall always report recurrence of the illness if the employee has been without the relevant symptoms for at least twelve months.

Notifications shall be provided of possible work-related illness as mentioned in the first and second subsections, regardless of whether the authorities have previously been notified of the matter, cf. Section 29, first subsection.

Reporting and Information Relating to Offshore Petroleum Activities, Information on monitoring, emissions, discharges and risk of pollution, C9 S36:
The operator shall submit the following material and information to the Climate and Pollution Agency:
a) results from monitoring of the external environment as mentioned in Chapter X of the Activities Regulations. The results from the monitoring as mentioned in Section 54, second subsection and Sections 55 and 56 of the Activities Regulations, shall be submitted in accordance with the Guidelines for environmental monitoring of the petroleum activities on the Norwegian continental shelf. Other monitoring results shall be submitted as soon as they become available,
b) information on changes in the risk of pollution. The information shall include the reasons for the change and remedial measures implemented,
c) report on annual emissions and discharges in accordance with the Climate and Pollution Agency's Guidelines for reporting from offshore petroleum activities. The reporting shall take place using ”EnvironmentWeb” (EW). The report and the underlying data shall be entered in EW by 1 March of the following year,
d) the results from the risk and emergency preparedness analyses as mentioned in Section 73 of the Activities Regulations, as well as a description, based on the conducted environmental risk and emergency preparedness analyses, of how the planned emergency preparedness for acute pollution will be safeguarded.

Norway: *Documentation is current, valid and approved*

Management of health, safety and the environment, C2 S6:

The responsible party shall ensure that the management of health, safety and the environment comprises the activities, resources, processes and organisation necessary to ensure prudent activities and continuous improvement, cf. Section 17 of the Framework Regulations.
Responsibility and authority shall be unambiguously defined and coordinated at all times.
The necessary governing documents shall be prepared, and the necessary reporting lines shall be established.

Organisation of material and information, C7 S24:
Information as mentioned in Section 23, first subsection of the Framework Regulations, shall be provided in the form decided by the supervisory authorities. The scope of directly available information shall be defined in relation to the request. The document shall be

a) a limited and coherent amount of information,
b) prepared for a specific purpose,
c) created in a recognised storage media,

Retention of material and information C9 S42:
Material and information pursuant to Section 24 shall be retained for as long as necessary in consideration of prudent operations. In particular,

a) anyone carrying out underwater contractor activities, shall retain the operation log from manned underwater operations for 40 years from the last entry,
b) the operator or the party responsible for operating a facility shall retain meteorological and oceanographic data until they have been submitted to the Norwegian Meteorological Institute,
c) the operator shall retain material and information on permanent plugback of wells,
d) the operator shall retain material and information on facilities and waste that have been temporarily abandoned on the seabed,
e) the operator shall retain material and information on acute pollution and measures against acute pollution with associated follow-up study,
f) the operator shall retain material and information on environmental monitoring,
g) the operator shall retain material and information on discharges of oil and on consumption and discharges of chemicals,
h) the responsible party shall retain material and information on hazard and accident situations, as well as any serious near misses,
i) the operator and the employer shall retain mapping results that document to what extent employees have been exposed to potential hazardous working environment factors. The period of retention shall be in proportion to the assumed hazardous long-term effects of the exposure.

At the time of expiration or surrender of the production license and specific permission to install and operate facilities according to Section 4-3 of the Petroleum Act, the party obligated to carry out the disposal decision according to Section 5-3 of the Petroleum Act, is responsible for retaining material and information as mentioned in first subsection.

In the cessation plan, the licensee shall account for the material and information the operator shall retain after the disposal decision has been carried out.

When the petroleum activities are terminated, the supervisory authorities can order that material and information as mentioned in the first subsection, be handed over.

Material and information that are not to be retained or handed over according to the first through fourth subsections, may be discarded and destroyed.

Canada: *Collection, processing and use of data*

Management System, 5(2)(f): …the processes for the internal reporting and analysis of hazards, minor injuries, incidents and near-misses and for taking corrective actions to prevent their recurrence;

Application for Authorization, 8(g): …if the possibility of pack sea ice, drifting icebergs or land-fast sea ice exists at the drill or production site, the measures to address the protection of the installation, including systems for ice detection, surveillance, data collection, reporting, forecasting and, if appropriate, ice avoidance or deflection.

Canada: *Information requirements:*

Application for Authorization, (2)6:
The application for authorization shall be accompanied by

(*a*) a description of the scope of the proposed activities;
(*b*) an execution plan and schedule for undertaking those activities;
(*c*) a safety plan that meets the requirements of section 8;
(*d*) an environmental protection plan that meets the requirements of section 9;
(*e*) information on any proposed flaring or venting of gas, including the rationale and the estimated rate, quantity and period of the flaring or venting;
(*f*) information on any proposed burning of oil, including the rationale and the estimated quantity of oil proposed to be burned;
(*g*) in the case of a drilling installation, a description of the drilling and well control equipment;
(*h*) in the case of a production installation, a description of the processing facilities and control system;
(*i*) in the case of a production project, a field data acquisition program that allows sufficient pool pressure measurements, fluid samples, cased hole logs and formation flow tests for a comprehensive assessment of the performance of development wells, pool depletion schemes and the field;
(*j*) contingency plans, including emergency response procedures, to mitigate the effects of any reasonably foreseeable event that might compromise safety or environmental protection, which shall
(i) provide for coordination measures with any relevant municipal, provincial, territorial or federal
emergency response plan, and
(ii) in an offshore area where oil is reasonably expected to be encountered, identify the scope and frequency of the field practice exercise of oil spill countermeasures; and

(*k*) a description of the decommissioning and abandonment of the site, including methods for restoration of the site after its abandonment.

Application for Authorization, (2)7:
(1) If the application for authorization covers a production installation, the applicant shall also submit to the Board for its approval the flow system, the flow calculation procedure and the flow allocation procedure that will be used to conduct the measurements referred to in Part 7.

(2) The Board shall approve the flow system, the flow calculation procedure and the flow allocation procedure if the applicant demonstrates that the system and procedures facilitate reasonably accurate measurements and allocate, on a pool or zone basis, the production from and injection into individual wells.

Application for Authorization, (2)8: The safety plan shall set out the procedures, practices, resources, sequence of key safety-related activities and monitoring measures necessary to ensure the safety of the proposed work or activity and shall include

(*a*) a summary of and references to the management system that demonstrate how it will be applied to the proposed work or activity and how the duties set out in these Regulations with regard to safety will be fulfilled;
(*b*) a summary of the studies undertaken to identify hazards and to evaluate safety risks related to the proposed work or activity;
(*c*) a description of the hazards that were identified and the results of the risk evaluation;
(*d*) a summary of the measures to avoid, prevent, reduce and manage safety risks;
(*e*) a list of all structures, facilities, equipment and systems critical to safety and a summary of the system in place for their inspection, testing and maintenance;
(*f*) a description of the organizational structure for the proposed work or activity and the command structure on the installation, which clearly explains

(i) their relationship to each other, and
(ii) the contact information and position of the person accountable for the safety plan and of the person responsible for implementing it;

(*g*) if the possibility of pack sea ice, drifting icebergs or land-fast sea ice exists at the drill or production site, the measures to address the protection of the installation, including systems for ice detection, surveillance, data collection, reporting, forecasting and, if appropriate, ice avoidance or deflection; and
(*h*) a description of the arrangements for monitoring compliance with the plan and for measuring performance in relation to its objectives.

Application for Authorization, (2)9: The environmental protection plan shall set out the procedures, practices, resources and monitoring necessary to manage hazards to and protect the environment from the proposed work or activity and shall include

(*a*) a summary of and references to the management system that demonstrate how it will be applied to the proposed work or activity and how the duties set out in these Regulations with regard to environmental protection will be fulfilled;
(*b*) a summary of the studies undertaken to identify environmental hazards and to evaluate environmental risks relating to the proposed work or activity;
(*c*) a description of the hazards that were identified and the results of the risk evaluation;

(*d*) a summary of the measures to avoid, prevent, reduce and manage environmental risks;
(*e*) a list of all structures, facilities, equipment and systems critical to environmental protection and a of the system in place for their inspection, testing and maintenance;
(*f*) a description of the organizational structure for the proposed work or activity and the command structure on the installation, which clearly explains
(i) their relationship to each other, and
(ii) the contact information and position of the person accountable for the environmental protection plan and the person responsible for implementing it;
(*g*) the procedures for the selection, evaluation and use of chemical substances including process chemicals and drilling fluid ingredients;
(*h*) a description of equipment and procedures for the treatment, handling and disposal of waste material;
(*i*) a description of all discharge streams and limits for any discharge into the natural environment including any waste material;
(*j*) a description of the system for monitoring compliance with the discharge limits identified in paragraph
(*i*), including the sampling and analytical program to determine if those discharges are within the specified limits; and
(*k*) a description of the arrangements for monitoring compliance with the plan and for measuring performance in relation to its objectives.

Well Approval, (2)10:
(1) Subject to subsection (2), an operator who intends to drill, re-enter, work over, complete or recomplete a well or suspend or abandon a well or part of a well shall obtain a well approval.
2) A well approval is not necessary to conduct a wire line, slick line or coiled tubing operation through a Christmas tree located above sea level if
(*a*) the work does not alter the completion interval or is not expected to adversely affect recovery; and
(*b*) the equipment, operating procedures and qualified persons exist to conduct the wire line, slick line or coiled tubing operations as set out in the authorization.

Well Approval, (2)11: If the well approval sought is to drill a well, the application shall contain
(*a*) a comprehensive description of the drilling program;
and
(*b*) a well data acquisition program that allows for the collection of sufficient cutting and fluid samples, logs, conventional cores, sidewall cores, pressure measurements and formation flow tests, analyses and surveys to enable a comprehensive geological and reservoir evaluation to be made.

Well Approval, (2)12: The application shall contain
(*a*) if the well approval sought is to re-enter, work over, complete or recomplete a well or suspend or abandon a well or part of it, a detailed description of that well, the proposed work or activity and the rationale for conducting it;
(*b*) if the well approval sought is to complete a well, in addition to the information required under paragraph

(*a*), information that demonstrates that section 46 will be complied with; and
(*c*) if the well approval sought is to suspend a well or part of it, in addition to the information required under paragraph (*a*), an indication of the period within which the suspended well or part of it will be abandoned or completed.

Canada: *Reporting, review and investigation of hazards and accidents*

Management System, 5(2)(f): …the processes for the internal reporting and analysis of hazards, minor injuries, incidents and near-misses and for taking corrective actions to prevent their recurrence;

Incidents and Near-misses, 11(75):
(1) The operator shall ensure that
(*a*) the Board is notified of any incident or near-miss as soon as the circumstances permit; and
(*b*) the Board is notified at least 24 hours in advance of any press release or press conference held by the operator concerning any incident or near-miss during any activity to which these Regulations apply, except in an emergency situation, in which case it shall be notified without delay before the press release or press conference.
(2) The operator shall ensure that
(*a*) any incident or near-miss is investigated, its root cause and causal factors identified and corrective action taken; and
(*b*) for any of the following incidents or near-misses, a copy of an investigation report identifying the root cause, causal factors and corrective action taken is submitted to the Board no later than 21 days after the day on which the incident or near-miss occurred:
(i) a lost or restricted workday injury,
(ii) death,
(iii) fire or explosion,
(iv) a loss of containment of any fluid from a well,
(v) an imminent threat to the safety of a person, installation or support craft, or
vi) a significant pollution event.

Submission of Data and Analysis, 11(76):
(1) The operator shall ensure that a final copy of the results, data, analyses and schematics obtained from the following sources is submitted to the Board:
(*a*) testing, sampling and pressure surveys carried out as part of the well and field data acquisition programs referred to in section 49 and testing and sampling of formations referred to in section 51; and
(*b*) any segregation test or well operation.
(2) Unless otherwise indicated in these Regulations, the operator shall ensure that the results, data, analyses and schematics are submitted within 60 days after the day on which any activity referred to in paragraphs (1)(*a*) and (*b*) is completed.

Records, 11(77):
The operator shall ensure that records are kept of
(*a*) all persons arriving, leaving or present on the installation;

(*b*) the location and movement of support craft, the emergency drills and exercises, incidents, near-misses, the quantities of consumable substances that are required to ensure the safety of operations and other observations and information critical to the safety of persons on the installation or the protection of the environment;
(*c*) daily maintenance and operating activities, including any activity that may be critical to the safety of persons on the installation, the protection of the environment or the prevention of waste;
(*d*) in the case of a production installation,
(i) the inspection of the installation and related equipment for corrosion and erosion and any resulting maintenance carried out,
(ii) the pressure, temperature and flow rate data for compressors and treating and processing facilities,
(iii) the calibration of meters and instruments,
(iv) the testing of surface and subsurface safety valves,
(v) the status of each well and the status of well operations,
and
(vi) the status of the equipment and systems critical to safety and protection of the environment including any unsuccessful test result or equipment failure leading to an impairment of the systems; and
(*e*) in the case of a floating installation, all installation movements, data, observations, measurements and calculations related to the stability and station-keeping capability of the installation.

Environmental Reports, 11(86):
(1) For each production project, the operator shall ensure that, not later than March 31 of each year, an annual environmental report relating to the preceding year is submitted to the Board and includes
(*a*) for an offshore installation, a summary of the general environmental conditions during the year and a description of ice management activities; and
(*b*) a summary of environmental protection matters during the year, including a summary of any incidents that may have an environmental impact, discharges that occurred and waste material that was produced, a discussion of efforts undertaken to reduce pollution and waste material and a description of environmental contingency plan exercises.
(2) For each drilling installation for an exploration or delineation well, the operator shall ensure that an environmental report relating to each well is submitted to the Board within 90 days after the rig release date and includes
(*a*) a description of the general environmental conditions during the drilling program and a description of ice management activities and downtime caused by weather or ice; and
(*b*) a summary of environmental protection matters during the drilling program, including a summary of spills, discharges occurred and waste material produced, a discussion of efforts undertaken to reduce them, and a description of environmental contingency plan exercises.

Canada: *Documentation is current, valid and approved*

Management System, 5(2):

(f) the processes for the internal reporting and analysis of hazards, minor injuries, incidents and near-misses and for taking corrective actions to prevent their recurrence;
(*g*) the documents describing all management system processes and the processes for making personnel aware of their roles and responsibilities with respect to them;
(*h*) the processes for ensuring that all documents associated with the system are current, valid and have been approved by the appropriate level of authority;

Management System, 5(3): The management system documentation shall be controlled and set out in a logical and systematic fashion to allow for ease of understanding and efficient implementation.

Operator's Duties, Availability of Documents, (3)17(1, 2):
(1) The operator shall keep a copy of the authorization, the well approval and all other approvals and plans required under these Regulations, the Act and the regulations made under the Act at each installation and shall make them available for examination at the request of any person at each installation.
(2) The operator shall ensure that a copy of all operating manuals and other procedures and documents necessary to execute the work or activity and to operate the installation safely without pollution are readily accessible at each installation.

Greenland: *Collection, processing and use of data*

Seabed Site Survey DG 2.1:
As part of the EIA and site survey requirements, the Drilling Application submission is preceded or accompanied by documentation showing that the operator has investigated the nature of the seafloor and underlying sediments to identify any potential surface or subsurface hazards such as shallow gas. These surveys are usually conducted using geophysical methods. An application to undertake such surveys should be made to the MLSA at least 6 weeks in advance of any Well Site Survey.

As a general principle, due to limited offset data from other wells and limited exploration wells having been drilled in Greenlandic territory, a small diameter Pilot hole shall be drilled in accordance with section 5.7.2.3 in NORSOK Standard D-010 and on each new well location prior to commencing the actual Drilling Programme. The depth of the Pilot hole may vary from location to location, but shall determine non presence/hazards of shallow gas, and establish safe foundation and setting depths for the surface casings.

The seismic/geophysical survey data shall as a general principle cover a radius of minimum 500 meters from the proposed well location centre.

Plans for relief well shall be in accordance with section 4.8.2 in NORSOK Standard D-010. The relief well locations must be surveyed and evaluated to same extend as the primary well location.

The site surveys shall include collection of specific Environmental Data as determined by MLSA. The requirements for Environmental Site Survey Data may vary for different license blocks and well locations.

The site survey with respect to drilling operations safety shall as a minimum determine:
- Foundation stability and anchor suitability
- Any limitations on well positioning with respect to avoid or reduce unnecessary impact to the environment
- Any limitations on positioning and anchoring of drilling MODUs and auxiliary crafts to avoid damage to pipelines, cables, etc. as well as unnecessary drilling risks.
- The possible presence of objects which might affect the drilling operation (boulders, wrecks, other wells, etc.).
- Possibility of penetrating gas bearing zones.
- Possibility of penetrating particularly weak zones.
- Possibility of penetrating zones with abnormal pressures.

Drilling Records and Reports, DG 3.0:
A 24 hour activity report summarizing as a minimum the drilling and related operations, lithology and weather & sea conditions must be provided daily to the MLSA covering activities up to 06.00 Greenlandic time of the reporting day. This report is required from the time of the MODU's arrival into the licence block for the planned drilling until operations are terminated at the wellsite.

The format used by operators for their internal daily morning reporting purposes is normally acceptable for the MLSA's monitoring requirements. A copy of the daily reporting format is to be presented to the MLSA for confirmation of acceptance. MLSA reserves the right to request alterations to the format and the content of the daily reports at any time during the reporting period.

3.1 Weather Forecasts and Ice Reports: The MLSA requests that a copy of the site-specific meteorological forecast and a report of ice conditions are to be provided daily to ensure the MLSA is fully informed of the status of conditions in the event of an alert or an emergency situation.

3. 2 Tour Sheets: One copy of the IADC Drilling Report Tour Sheets should be submitted weekly to the MLSA.

3.3 MODU Movement: Before a MODU or any support vessel can either enter into or move between locations within Greenland territorial waters the MLSA has to be notified and the MODU operator must report directly to the Greenland Command at the naval base in Kangilinnguit (under the Danish Ministry of Defence) when entering Greenland waters.

3.4 Significant Events and Hazardous Occurrences: Any serious injury, loss of life, significant event or hazardous occurrence must be reported to the MLSA immediately. The reporting procedures for such events should be in accordance with the procedures established in the MLSA contingency committee.

Greenland: *Information requirements*

Environmental liability and responsibility, MRA Part 14 §65: (1) The Greenland Government may issue an enforcement notice to the responsible party to provide information of importance for an assessment as to whether environmental damage or an imminent danger of environmental damage has occurred. For example, an enforcement notice may be issued to the effect that the responsible party must for its own account conduct studies, make analyses and take measurements of substances or materials or similar with a view to clarifying the cause and effect of pollution that has occurred.

Emergency committee and accident investigation board, MRA §82:
(1) Those to whom duties have been assigned under this Greenland Parliament Act must upon request provide the Greenland Government, the emergency committee and the accident investigation board with all information they consider necessary for performing their activities under this Part. This provision also applies to persons who are acting on behalf of those to whom duties under the Greenland Parliament Act have been assigned.

(2) Those to whom duties have been assigned under this Greenland Parliament Act must render the Greenland Government, the emergency committee and the accident investigation board all necessary assistance during their investigations under this Part.

Authority consideration, etc, MRA, Part 18, 86.3: Licensees and others under this Greenland Parliament Act must submit any information required for the authorities' consideration of their operations or activities under the Act. The Greenland Government may for the purpose of the regulatory process under this Greenland Parliament Act order licensees and others to submit the information in the way and in the form deemed necessary by the Greenland Government.

Greenland: *Reporting, review and investigation of hazards and accidents*

Environmental liability and responsibility, MRA Part 14 §65 (1): See Information Requirements

Health and safety on offshore facilities, 79–(1): The licensee must ensure that health and safety risks in relation to offshore facilities used for exploration, exploitation or transport of hydrocarbons have been identified, assessed and reduced as much as is practically possible.

Recording and reporting, etc., EO §§ 37:
§ 37. The operator company and each employer shall make the notification of accidents and other aspects of safety and health importance to MLSA and record conditions of security and health significance.

(2). Doctors who finds or suspects that a person has been exposed to harmful influences at work, after the consent of the person concerned, inform the MLSA.

(3). MLSA must inform the police about the reviews under paragraph 1 and paragraph 2, for the investigation of any violation of applicable law.

Managing Safety and Health Management System for Safety And Health, EO Chapter 5, 19.10-12:

If the operator company has chosen to build its management system after another similar system, management system, as a minimum, include:
10) management of documentation, including reporting routines,
11) audit and
12) management review of the management system in order to ensure its continuing suitability, adequacy and effectiveness

Health and safety statement C 6:
§ 22. The operators undertaking must ensure that for a mobile offshore units draw up a health and safety statement that at a minimum contains:

1) identification of the risks associated with offshore installation, including any activity in connection with this, and which could have serious consequences for workers ' safety and health,
2) assessment of the risks referred to in art. 1,
3) demonstrate that in nr. 1 such risks are reduced as much as is reasonably practicable, including to the maximum and minimum manning requirements for operation of the facility are stated, and to an efficient and controlled evacuation of the offshore installation can take place in critical situations and
4) show that the management system, see. § 20, ensure and demonstrate that the requirements of this Ordinance are complied with in both normal and critical situations.

(2). Health and safety statement shall be drawn up before the offshore installation put into operation on the territorial sea or continental shelf area of Greenland.
(3). MLSA may recommend the use of specific methods, norms and standards to be used in preparing safety and health statement, such as NORSOK.

§ 23. The operating company responsible for a mobile offshore units must ensure that health and safety statement be updated by substantial changes of the plant, its furnishings, equipment or operational conditions.

(2). Health and safety statement shall be provided at the site and be accessible to the plant operators and employees as well as for the supervisory authority.

HSE Assessment, DG 1.2: See Collection, Processing and Use of Data and Hazards Analysis

Greenland: *Documentation is current, valid and approved*

Health and safety statement, EO C 6, § 19:
§ 19. If the operator company has chosen to build its management system after another similar system, management system, as a minimum, include:

1) A policy set by your organization for health and safety, which among other things includes a commitment to continual search of improvement of safety and health level,
2) goals of safety and health in the short and long term,
3) distribution of responsibilities between the individual functions in the part of the company's organizationrelating to health and safety on offshore installations,
4) management of training and competence, including the definition of the company's requirements therefor, having regard to applicable law,
5) management of contractors,

6) management of the cooperation with the staff through a security organization,
7) setting the requirements specifications for safety and health, as a minimum, implement legislative requirements,
8) implementation of requirements specifications for nr. 7 and control thereof,
9) control of non-conformities,
10) management of documentation, including reporting routines,
11) audit and
12) management review of the management system in order to ensure its continuing suitability, adequacy and effectiveness

Health and safety statement, C 6, (22 and 23): See Reporting, review and investigation of hazards and accidents

United States: *Collection, processing and use of data*

Safety and Environmental Information, 30CFR § 250.1910 (a, b [1,2,3]);
(a) You must require that SEMS program safety and environmental information be developed and maintained for any facility that is subject to the SEMS program.
(b) SEMS program safety and environmental information must include:
(1) Information that provides the basis for implementing all SEMS program elements, including the requirements of hazard analysis (§250.1911);
(2) process design information including, as appropriate, a simplified process flow diagram and acceptable upper and lower limits, where applicable, for items such as temperature, pressure, flow and composition; and
(3) mechanical design information including, as appropriate, piping and instrument diagrams; electrical area classifications; equipment arrangement drawings; design basis of the relief system; description of alarm, shutdown, and interlock systems; description of well control systems; and design basis for passive and active fire protection features and systems and emergency evacuation procedures.

Criteria for hazards analyses in the SEMS program, §250.1911:
(a) Hazards Analysis (facility level).
(3) You should assure that the recommendations in the hazards analysis are resolved and that the resolution is documented.
(b) Job Safety Analysis (JSA). You must develop and implement a JSA for OCS activities identified or discussed in your SEMS program.
(1) You must keep a copy of the most recent JSA (operations/task level) at the job site and it must be readily accessible to employees.
(2) Your JSA must identify, analyze, and record:
(i) The steps involved in performing a specific job;
(ii) the existing or potential safety and health hazards associated with each step; and
(iii) the recommended action(s)/procedure(s) that will eliminate or reduce these hazards and the risk of a workplace injury or illness.
(3) The supervisor of the person in charge of the task must approve the JSA prior to the commencement of the work.

Criteria for Safe Work Practices and Contractor Selection Documentation in the SEMS Program, § 250.1914 (b and e [2]):
Your SEMS program must establish and implement safe work practices designed to minimize the risks associated with operating, maintenance, and modification activities and the handling of materials and substances that could affect safety or the environment. Your SEMS program must also document contractor selection criteria. When selecting a contractor, you must obtain and evaluate information regarding the contractor's safety and environmental performance. Operators must ensure that contractors have their own written safe work practices. Contractors may adopt appropriate sections of the operator's SEMS program. Operator and contractor must document their agreement on appropriate contractor safety and environmental policies and practices before the contractor begins work at the operator's facilities.
(b) You must document that your contracted employees are knowledgeable and experienced in the work practices necessary to perform their job in a safe and environmentally sound manner. Documentation of each contracted employee's expertise to perform his/her job and a copy of the contractor's safety policies and procedures must be made available to the operator and BSEE upon request.
(e) (2) You must (2) Maintain a contractor employee injury and illness log for 2 years related to the contractor's work in the operation area, and include this information on Form BSEE–0131.

Recordkeeping and Documentation Requirements, § 250.1928:
(a) Your SEMS program procedures must ensure that records and documents are maintained for a period of 6 years, except as provided below. You must document and keep all SEMS audits for 6 years and make them available to BSEE upon request. You must maintain a copy of all SEMS program documents at an onshore location.
(b) For JSAs, the person in charge of the activity must document the results of the JSA in writing and must ensure that records are kept onsite for 30 days. You must retain these records for 2 years and make them available to BSEE upon request.
(c) You must document and date all management of change provisions as specified in §250.1912. You must retain these records for 2 years and make them available to BSEE upon request.
(d) You must keep your injury/illness log for 2 years and make them available to BSEE upon request.
(e) You must keep all evaluations completed on contractor's safety policies and procedures for 2 years and make them available to BSEE upon request.
(f) You must keep all records in an orderly manner, readily identifiable, retrievable and legible, and include the date of any and all revisions.

United States: *Information requirements*

Safety and Environmental Information, 30CFR § 250.1910 (a, b [1,2,3]); See Collection, processing and use of data

Criteria for hazards analyses in the SEMS program, §250.1911 (a, b); See Collection, processing and use of data

Criteria for Operating Procedures in the SEMS Program § 250.1913 (a, 8 and 10):
(a) You must develop and implement written operating procedures that provide instructions for conducting safe and environmentally sound activities involved in each operation addressed in your SEMS program. These procedures must include the job title and reporting relationship of the person or persons responsible for each of the facility's operating areas and address the following:

(8) Properties of, and hazards presented by, the chemicals used in the operations;
(10) Raw materials used in your operations and the quality control procedures you used in purchasing these raw materials;

Criteria for Investigation of Incidents in the SEMS Program, § 250.1919 (a);
To learn from incidents and help prevent similar incidents, your SEMS program must establish procedures for investigation of all incidents with serious safety or environmental consequences and require investigation of incidents that are determined by facility management or BSEE to have possessed the potential for serious safety or environmental consequences. Incident investigations must be initiated as promptly as possible, with due regard for the necessity of securing the incident scene and protecting people and the environment. Incident investigations must be conducted by personnel knowledgeable in the process involved, investigation techniques, and other specialties that are relevant or necessary.
(a) The investigation of an incident must address the following:

(1) The nature of the incident;
(2) The factors (human or other) that contributed to the initiation of the incident and its escalation/control; and
(3) Recommended changes identified as a result of the investigation.

Recordkeeping and Documentation Requirements, § 250.1928: See Collection, processing and use of data

United States: *Reporting, review and investigation of hazards and accidents*

Management's General Responsibilities for the SEMS Program, §250.1909 (d):
You, through your management, must require that the program elements discussed in API RP 75 (as incorporated by reference in §250.198) and in this subpart are properly documented and are available at field and office locations, as appropriate for each program element. You, through your management, are responsible for the development, support, continued improvement, and overall success of your SEMS program. Specifically you, through your management, must: (d) At intervals specified in the SEMS program and at least annually, review the SEMS program to determine if it continues to be suitable, adequate and effective (by addressing the possible need for changes to policy, objectives, and other elements of the program in light of program audit results, changing circumstances and the commitment to continual improvement) and document the observations, conclusions and recommendations of that review.

Criteria for hazards analyses in the SEMS program, § 250.1911 (1 [iv], 2); See Collection, processing and use of data

Criteria for Operating Procedures in the SEMS Program § 250.1913 (d, e):
(d) You must develop and implement safe and environmentally sound work practices for identified hazards during operations and the degree of hazard presented.
(e) Review of and changes to the procedures must be documented and communicated to responsible personnel.

Criteria for Investigation of Incidents in the SEMS Program, § 250.1919:
To learn from incidents and help prevent similar incidents, your SEMS program must establish procedures for investigation of all incidents with serious safety or environmental consequences and require investigation of incidents that are determined by facility management or BSEE to have possessed the potential for serious safety or environmental consequences. Incident investigations must be initiated as promptly as possible, with due regard for the necessity of securing the incident scene and protecting people and the environment. Incident investigations must be conducted by personnel knowledgeable in the process involved, investigation techniques, and other specialties that are relevant or necessary.
(a) The investigation of an incident must address the following:
(1) The nature of the incident;
(2) The factors (human or other) that contributed to the initiation of the incident and its escalation/control; and
(3) Recommended changes identified as a result of the investigation.
(b) A corrective action program must be established based on the findings of the investigation in order to analyze incidents for common root causes. The corrective action program must:
(1) Retain the findings of investigations for use in the next hazard analysis update or audit;
(2) Determine and document the response to each finding to ensure that corrective actions are completed; and
(3) Implement a system whereby conclusions of investigations are distributed to similar facilities and appropriate personnel within their organization.

Recordkeeping and Documentation Requirements, § 250.1928: See Collection, processing and use of data

United States: *Documentation is current, valid and approved*

Management's General Responsibilities for the SEMS Program, §250.1909 (g):
Ensure that facilities are designed, constructed, maintained, monitored, and operated in a manner compatible with applicable industry codes, consensus standards, and generally accepted practice as well as in compliance with all applicable governmental regulations.

Safety and Environmental Information, 30CFR § 250.1910 (a, b [1,2,3]); See Collection, processing and use of data

Criteria for Management of Change in the SEMS Program, § 250.1912 (f);
If a management of change results in a change in the operating procedures of your SEMS program, such changes must be documented and dated.

Criteria for Operating Procedures in the SEMS Program § 250.1913: See Reporting, review and investigation of hazards and accidents

Criteria for Safe Work Practices and Contractor Selection Documentation in the SEMS Program, § 250.1914: See Collection, processing and use of data

Criteria for Mechanical Integrity for the SEMS Program, § 250.1916 (d);
You must develop and implement written procedures that provide instructions to ensure the mechanical integrity and safe operation of equipment through inspection, testing, and quality assurance. The purpose of mechanical integrity is to ensure that equipment is fit for service. Your mechanical integrity program must encompass all equipment and systems used to prevent or mitigate uncontrolled releases of hydrocarbons, toxic substances, or other materials that may cause environmental or safety consequences. These procedures must address the following:
(d) The documentation of each inspection and test that has been performed on your equipment and systems. This documentation must identify the date of the inspection or test; include the name and position, and the signature of the person who performed the inspection or test; include the serial number or other identifier of the equipment on which the inspection or test was performed; include a description of the inspection or test performed; and the results of the inspection test.

Determination of Effectiveness of the SEMS Program, § 250.1924 (b [4, 5]):
(b) For the evaluations, you must make the following available to BSEE upon request:

(1) Your SEMS program;
(2) The qualifications of your independent third-party or your designated and qualified personnel;
(3) The SEMS audits conducted of your program;
(4) Documents or information relevant to whether you have addressed and corrected the deficiencies of your audit; and
(5) Other relevant documents or information.

Recordkeeping and Documentation Requirements, § 250.1928: See Collection, processing and use of data

Responsibilities for Submitting OCS Performance Measure Data, § 250.1929:
You must submit Form BSEE–0131 on an annual basis by March 31st. The form must be broken down quarterly, reporting the previous calendar year's data.

Communication

Norway: *Internal Communications and Analysis*

Management of health, safety and the environment, C2 S6**:**

The responsible party shall ensure that the management of health, safety and the environment comprises the activities, resources, processes and organisation necessary to ensure prudent activities and continuous improvement, cf. Section 17 of the Framework Regulations.
Responsibility and authority shall be unambiguously defined and coordinated at all times.
The necessary governing documents shall be prepared, and the necessary reporting lines shall be established.

Internal requirements, C3 S8:
The responsible party shall set internal requirements that put regulatory requirements in concrete terms, and that contribute to achieving the objectives for health, safety and the environment, cf. Section 7 regarding objectives and strategies. If the internal requirements are expressed as functional requirements, achievement criteria shall be set.

The operator shall ensure agreement between its own requirements and between its own and other participants' requirements.

Canada: *Internal Communications and Analysis*

Management System, Part 2 5(2)(f) 5 (2):
The management system shall include the processes for the internal reporting and analysis of hazards, minor injuries, incidents and near-misses and for taking corrective actions to prevent their recurrence;

Greenland: *Internal Communications and Analysis*

Ordinary Duties of Responsibilities Between the Various Types of Companies, EO C2:

Responsibilities Within Each Company EO C3: See Respnsibility for Contractors and all Parties

Health and safety statement, EO C 6, § 19: See Documentation is current, valid and approved

United States: *Internal Communications and Analysis*

Management's General Responsibilities for the SEMS Program, §250.1909 (a, e):
You, through your management, must require that the program elements discussed in API RP 75 (as incorporated by reference in §250.198) and in this subpart are properly documented and are available at field and office locations, as appropriate for each program element. You, through your management, are responsible for the development, support, continued improvement, and overall success of your SEMS program. Specifically you, through your management, must:
(a) Establish goals and performance measures, demand accountability for implementation, and provide necessary resources for carrying out an effective SEMS program.
(e) Develop and endorse a written description of your safety and environmental policies and organizational structure that define responsibilities, authorities, and lines of communication required to implement the SEMS program.

Criteria for Training in the SEMS Program, § 250.1915 (c): See Operating Procedures/Work Processes