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# 141 – Norwegian Oil and Gas Recommended guidelines for managing major accident risk in licences

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Translated version

## **Foreword**

These guidelines are recommended by the HSE Managers Forum and the Operations Committee in Norwegian Oil and Gas. They have also been approved by the director general of Norwegian Oil and Gas.

The work group has been comprised by members from the following companies:

ConocoPhillips, ExxonMobil, Total, Eni Norge, Wintershall, Centrica, VNG, Faroe Petroleum and Explora Petroleum.

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These Norwegian Oil and Gas recommended guidelines have been developed with broad participation by interested parties in Norway's petroleum industry and are owned by Norwegian Oil and Gas on behalf of the industry. Their administration is assigned to Norwegian Oil and Gas.

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# 1 INTRODUCTION

## 1.1 Purpose

This guideline:

- describes a common working practice for licensee activities in licences related to managing major accident risk in various phases of petroleum operations
- describes the operator's facilitation of the partners' "see to it" duty related to major accident risk
- lays the basis for utilising the licensees' collective expertise and experience
- lays the basis for consistent follow-up of major accident risk across licences
- aims to promote commitment, involvement and raising awareness in relation to decisions which could influence the risk of major accidents.

## 1.2 Scope

These guidelines apply to the management of major accident risk in licences on the Norwegian continental shelf (NCS) held by a licensee where activities with a major accident potential are planned or in progress:

- offshore field developments/production facilities
- different phases of a development/a production facility (from the exploration phase to cessation and removal of the facility).

These guidelines do not apply to:

- licences where no offshore activity is planned or ongoing.

## 1.3 Definitions and abbreviations

BOK	Decision to concretise.
BOV	Decision on continuation.
Development phase	This phase extends from the feasibility study until the field comes on stream.
DSHA	Defined situations of hazards and accidents.
Exploration drilling	Planning and execution of wildcats and appraisal wells, including production testing.
Exploration phase decision.	From the award of (possibly farm-in to) a licence until the drilling decision.
Insight	Means that access to information is made available on the company's premises, but that the information is not necessarily distributed.

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Licensee	A natural or legal person, or several such persons, who hold a licence pursuant to the Norwegian Petroleum Act or earlier legislation to explore, produce, transport or exploit. If a licence is awarded jointly to several such persons, the term “licensee” may refer both to the licensees collectively and to the individual licensee.
Major accident	A major accident means an acute incident such as a major spill, fire or explosion which immediately or subsequently entails multiple serious personal injuries and/or loss of human lives, serious harm to the environment and/or loss of major financial assets.
PDO	Plan for development and operation of a petroleum deposit.
Production phase	Period from start-up to cessation.
Production drilling	All planning, drilling and completion of wells to be used for production or injection in the operations phase.
Removal	All activities related to planning and removal of facilities (including subsea installations and pipelines) and wells.
Risk	Risk means the consequences of the activity with associated uncertainty.
RNNP Authority	Trends in risk level in the petroleum activity (Petroleum Safety Norway).

## 1.4 References

Section 7, paragraph 3, and section 11 of the Framework Regulations on the licensee’s “see to it” duty and risk-reduction principles respectively.

Chapter II of the Management Regulations on risk management and sections 4, 5 and 6 on risk reduction, barriers, and management of health, safety and the environment respectively  
Joint operator agreement (JOA).

## 2 MANAGEMENT OF MAJOR ACCIDENT RISK

Government requirements and the operator's management system and process for risk management form the basis for partner follow-up of and involvement in the management of major accident risk. Access by the partners to sufficient information must be facilitated in order for them to be able to make their own assessments of the risk picture. The operator should organise arenas where major accident risk is a subject. The processes and activities described below provide a recommendation for how this can be organised.

### 2.1 Partner involvement

#### 2.1.1 Expectations

Partners are expected to support and follow-up the operator's management of major accident risk by:

- conducting assessments of the operator's current and planned activities
- contributing their own experience, expertise and advice, both in the risk management process and by identifying possible major accident risks.

#### 2.1.2 Conditions

On request, the partners should be given insight into relevant information on the activity. Important conditions for their ability to make a positive contribution will typically include insight into:

- parts of the operator's governing documentation which are significant for managing major accident risk
- the operator's analyses and risk assessments which are relevant to major accident risk
- information on current and planned activities
- information on technical conditions of significance for managing major accident risk
- maintenance status of systems and equipment which are significant for major accident risk
- changes in status, including follow-up of earlier activities/analyses/risk pictures.

### 2.2 Operator's facilitation of partner follow-up

The operator is assumed to provide the partners with adequate information on the activity, so that the latter can make their own assessments of the risk picture. Typical information required in this context is listed in section 2.1.2 Conditions.

Partners in the licence engage in the management of major accident risk through the following activities:

- management committee
- discipline committees, eg, Technical committee
- management inspections
- audits
- experience transfer
- working meetings to follow up major accident risk.

## 2.3 Meetings of the management and discipline committees

Achieving the most harmonised possible understanding of major accident risk in the licence is desirable. The operator should therefore present updated assessments of this risk to the licence's committees.

### 2.3.1 Management inspections

Licensees should agree on participation in management/HSE inspections. The purpose of the latter will be based on the licence's plans and priorities, and should include topics related to major accident risk.

### 2.3.2 Audits

The operator should inform the partners about its annual audit plan, and highlight activities where major accident risk is included in the scope of work.

The partners should be invited to participate in planned audits where major accident risk is included as a topic. Furthermore, the licensees should be informed about the results of internal and external audits which are significant for major accident risk.

The operator should provide information about HSE audits by regulators and present the status of their follow-up.

### 2.3.3 Experience transfer

Knowledge about conditions which could lead to major accidents should be shared in the licence.

The operator should:

- make provision for giving partners in the licence the necessary insight in documentation of significance for major accident risk
- share experience of such matters as incidents, near-misses and the application of best practice
- make provision for partners to share their experience
  
- invite partners to participate in risk assessments.

### 2.3.4 Working meetings for following up major accident risk

Holding working meetings with attention concentrated on major accident risk is recommended. See chapter 3. Proposals for planning, execution and follow-up are described in appendix 1.

### 3 FOLLOW-UP IN VARIOUS PHASES OF THE ACTIVITY

Opportunities for influencing the risk of major accidents will vary in line with the different phase of the activity. Involvement of the partners must therefore be tailored to the various stages.

Proposals for follow-up tailored to phases/activities are checked in the table below.

Activities > Phases v	Annual discussion in relation to the budget <sup>1</sup>	Assessment of major accidents as part of the decision base <sup>2</sup>	Working meeting on major accident risk <sup>3</sup>
Exploration phase	X	X	
Exploration drilling	X	X (consent)	X
Production drilling/well intervention	X	X (consent)	X
<b>Development</b>			
• Feasibility study		X (BOK)	
• Choice of concept		X (BOV)	
• Definition of concept		X (PDO)	
• Detail design and execution		X	X
• Ready for operation		X (consent)	
<b>Production</b>			
• Start-up	X		X
• Regular operation	X		X
• Late life/producing life extension	X	X (consent)	X
• Cessation	X	X	X
Removal	X	X (consent)	X

<sup>1</sup> As part of budget processes, one should ensure that measures for managing major accident risk are covered.

<sup>2</sup> The operator should share its assessments of major accident risk as part of the basis for considering applications/decisions with the partners.

<sup>3</sup> Working meetings on major accident risk should be held:

- before exploration drilling begins
- regularly for fields in operation and project phases which extend over several years
- before removal of installations.

The RNNP report's overview of defined situations of hazards and accidents with a major accident potential can be used as the basis for selecting the scenarios to be assessed. See appendix 1 – examples for preparing and executing working meetings.

## APPENDIX 1 Working meeting on major accident risk in the licence

### a) Purpose

The intention of a working meeting on major accident risk is to contribute to a common understanding of such risk and to exchange experience between licensees, and to focus on specific subjects related to major accident risk.

This appendix makes proposals on the planning, execution and follow-up of activities related to working meetings on major accident risk. It covers meeting frequency, form and level tailored to activity in the licence, including alterations to the risk picture resulting from modification projects, producing life extensions, technical integrity, organisational changes, new activities and other changes which could affect major accident risk.

### b) Preparations

To ensure a shared understanding of the work and to calibrate expectations ahead of the working meeting, an agenda should be established in good time before the meeting.

A brief preliminary meeting is recommended to:

- ensure shared understanding of the goal of the working meeting
- agree on proposed subjects and agenda
- clarify the contributions to be made by the licensees.

### c) Notice and documentation

The operator issues a notice of the meeting and documentation by the agreed deadline.

Documentation for the working meeting will typically include information relevant to the subject and agenda of the working meeting, such as:

- the status/the operator's assessments of major accident risk
- relevant extracts from/presentation of results from quantitative risk analyses
- overview of technical integrity and barrier status (including drilling and well)
- relevant overview of outstanding maintenance for safety-critical equipment
- long-range plans (LRP)/work programmes/project plans.

### d) Participation in working meetings

Typical participants in working meetings will include the following.

Partners:

- representatives from the licence management committee and/or discipline committees
- relevant discipline expertise – operational/technical/HSE.

Operator:

- chair of the management committee
- chairs of relevant discipline committees
- relevant operational personnel (production, project, technical, HSE)
- organiser with experience from risk analyses/working meetings on major accident risk.

The organiser should be an expert on risk management who can ensure consistency across the operator's licences.

## e) Proposed agenda

1. Introduction
2. Summation of HSE results for the past year/period and changes in major accident risk, including the status of risk-reducing measures
3. Experience transfer from partners and operators, such as:
  - incidents
  - other relevant experience related to the meeting's subject
4. Risk review – major accident risk (agreed subject)  
The basis for the discussion of major accident risk can vary over time, and should reflect an updated risk picture and work programme for the coming period, such as:
  - work programme and activities for the coming period
  - discussion on DSHAs which could develop into a major accident, and on major accident scenarios which are the most critical
  - condition of relevant barriers, with attention directed at measures to correct or compensate for possible weakening of/weaknesses in barriers
  - risk related to modification projects
  - relevant extracts from risk analyses
  - review of the operator's risk process related to consequences, probability, uncertainty and risk-reducing measures for identified risks
  - assessment of the risk picture, relevant risk-reducing measures and operational limitations.
5. Summing-up and the way ahead:
  - brief summing-up, including list of new identified risks and new risk-reducing measures as well as proposed changes to plans (action list)
  - agree on the way follow-up and updating of the partners will be conducted, including changes to the risk picture and evaluation of proposed changes to the work programme/project.
6. Evaluation of the working meeting:
  - discuss and note possible improvements ahead of the next working meeting for major accident risk.

## f) Advice on the conduct of meetings

- The main focus of attention is on the identification of risk – discussion of consequences, probability, uncertainty and risk-reducing measures for selected risks.
- Make the discussion specific by focusing on selected activities, projects or lessons learnt from serious incidents.
- Concentrate attention on the effect/consequences of the combination of weakened barriers and planned activities.
- Sufficient time should be allocated for discussion and dialogue.