

# Offshore oil and gas installations in the North Sea

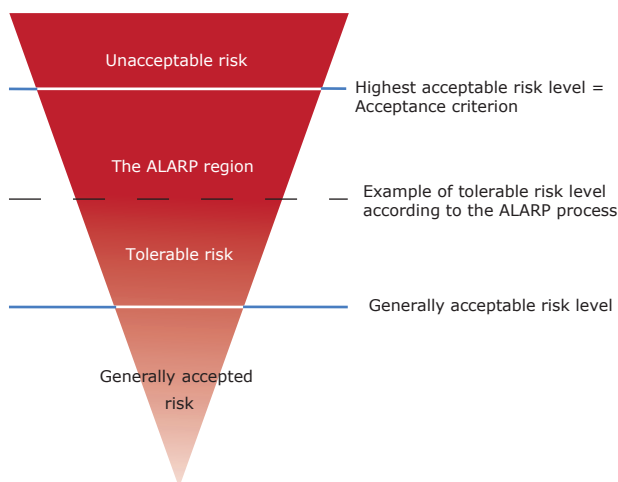
Health and safety

Up to 3000 people are employed in oil and gas production in the Danish sector of the North Sea. A high safety level and a good working environment are essential and important components of their everyday working lives.

## A 24/7 workplace for a wide variety of employees

Oil and gas production takes place round the clock throughout the year. An offshore installation comprises a small, independent community that must constitute a safe and healthy workplace for many different work functions: metalworkers, electricians, process technicians, geologists and engineers, as well as painters, scaffolders and medics, etc. all play an essential role in the work of extracting oil and gas from the subsoil and the subsequent processing. Therefore, health and safety play an important part of their everyday lives offshore.

Figure 1: The ALARP principle



## Installation safety and employee health

In order to construct and operate an offshore installation with a high safety level and a good working environment, it is necessary to identify, assess and reduce the health and safety risks. This applies both to the design of the installation, which has a material impact on the risk of major accidents, and to the health and safety risks associated with the layout of workplaces and the performance of the work. These risks should be assessed and reduced to a level as low as reasonably practicable, using the so-called ALARP principle; see figure 1.

In addition to the working environment, other conditions contribute to a safe and healthy workplace on the installations, both during and outside working hours. Physical exercise, a healthy diet, a good indoor climate, good quality drinking water and sanitary conditions, as well as sufficient undisturbed rest are high priority issues that contribute to a safe and healthy environment for everyone on the offshore installation.

A safety organization with representatives of employers and employees is set up on each offshore installation to improve safety and health. Regular safety meetings are held to minimize health and safety risks and to share knowledge and experience in this field.

However, health and safety procedures cannot stand alone, as not all human behaviour can be regulated. The companies make continuous efforts to promote a health and safety culture by motivating and training their employees through courses, campaigns and daily involvement, and thus to prevent and rectify high risk-situations.



### Offshore installations

- **Mobile unit:** An offshore unit that can be moved from one position to another, enabling it to be used at different locations during its useful life, e.g. a drilling rig or a flotel.
- **Fixed installation:** An offshore installation that is not mobile, e.g. a production platform or an unmanned wellhead platform.

### Emergency procedures

An emergency response plan to be used in case of accidents is drawn up for each individual offshore installation. Specially trained personnel are assigned specific emergency response duties on the installations, such as fire officers, fire-fighters, lifeboat captains, first aiders, etc. The employees' emergency response skills are maintained by holding regular drills and providing supplementary training. Everyone working on an offshore installation must complete an offshore safety course, which includes training in first aid, fire-fighting, the use of life-saving appliances, as well as HUET\*. Upon arrival on an offshore installation, all visitors and employees who do not work regularly on the installation are given a safety introduction that includes a review of alarm procedures, escape routes and muster areas, as well as life-saving and fire-fighting appliances.

\*Helicopter Underwater Escape Training.

### The DEA's supervision

The DEA carries out supervision to ensure that the companies comply with health and safety legislation in connection with their offshore oil and gas extraction and production activities. This supervision is based, among other things, on the companies' applications for the approval of development projects or modifications to existing installations. Moreover, the DEA supervises the design of workplaces, emergency procedures, safety-critical equipment, maintenance, noise-reducing measures, chemicals and pressurized equipment, etc.

\*Helicopter Underwater Escape Training.

The DEA regularly inspects the offshore installations and the companies' onshore bases in order to review the companies' health and safety management systems. These management systems are intended to ensure and document compliance with the regulatory requirements laid down under applicable legislation. At the same time, the systems must ensure that installations are planned, designed and constructed and that work procedures are arranged and executed so as to reduce health and safety risks as much as reasonably practicable. The DEA carries out both announced and unannounced inspections.

### The DEA is responsible for issuing:

- Approvals of the general design of fixed installations prior to construction
- Operating permits for the production of oil or gas on fixed installations
- Operating permits for mobile units that have applied to operate in the Danish sector
- Permits for modifications materially affecting the risk of major accidents on fixed installations and mobile units
- Permits for the removal of fixed installations upon the discontinuation of extraction and production.

Approvals or permits are granted on the basis of an application that must enclose a health and safety case, which describes how the health and safety risks have been reduced to a level as low as reasonably practicable.

### Supervision of special topics

In addition, the DEA's supervision of special topics focuses on selected topics/risk factors related to health and safety, e.g., the psychological working environment, musculoskeletal disorders, requirements for education, training and skills, as well as process safety.

### Legislation

As a government agency, the DEA prepares draft Bills, Executive Orders and guidelines regarding health and safety on offshore installations. The Offshore Safety Act aims to ensure that the level of health and safety in the Danish sector remains among the highest in the North Sea countries.