## PETROLEUM SAFETY AUTHORITY NORWAY 2011

# ANNUAL REPORT



#### FOREWORD

This publication is the facts section of the annual report from the Petroleum Safety Authority Norway (PSA) for 2011. It should be read in conjunction with our publication entitled Safety – status and signals 2011-2012, which summarises issues of particular concern to us last year and looks ahead to the biggest challenges we foresee in the future.

The following pages provide factual information on conditions which affected our operations in 2011. That includes the priorities we set for our supervisory activities and other work.

Our annual report on Trends in risk level in the petroleum activity (RNNP), which is published both in a complete form and in a summary version, contains an extensive overview of incidents, accidents and injuries in 2011. It provides a comprehensive review of the risk picture in this sector and its development. The summary version is available in English.

We hope that these publications will collectively provide a good overall picture of the safety challenges faced by the petroleum industry in Norway, the responsibilities of the participants in this activity, and how we as the regulatory authority supervise industry observance of these responsibilities.

# CONTENTS

SUPERVISION OF SAFETY IN THE PETROLEUM ACTIVITY	4-11
NATIONAL AND INTERNATIONAL COOPERATION	11-15
PUBLIC AFFAIRS AND COMMUNICATION	15-17
ORGANISATION	17-18
KEY FINANCIAL FIGURES	18

#### 1. SUPERVISION OF SAFETY IN THE PETROLEUM ACTIVITY

The concept of "supervision" embraces all the activities we pursue in order to

- form a picture of the safety status at one or more of the players in the petroleum business
- ensure that all the players conduct their activities in accordance with regulatory and/or in-house requirements
- consider applications for consents, acknowledgements of compliance (AoCs) and plans for development and operation/installation and operation (PDO/PIO)
- assess whether compensatory measures adopted are adequate for operating acceptably
- investigate conditions relating to a serious undesirable incident
- conduct supervision pursuant to the Act on Pay Agreement Application (non-re fundable activity)
- influence the players with a view to improving the level of safety.

Our annual activity plans are based on a number of factors which reflect the reality in which we exercise our regulatory role, and the requirements and expectations set for us through the Ministry of Labour.

To achieve the best possible application of our resources in meeting the established targets, we set a number of main priorities every year which form the basis for our supervisory activities. Our main priorities for 2011 related to:

- management and major accident risk
- prevention of acute discharges and safe pollution reduction
- groups particularly exposed to risk
- barriers.

These are areas we prioritise ahead of others. This means that the plans laid for supervision in these areas have by and large been fulfilled. The four main priorities are of equal importance, so the order in which they are listed is not intended to reflect any relative significance.

Work on our main priorities is supplemented by a number of other activities which are significant for safety. These may be restricted to a specific company, a particular type of activity or the like. They embrace both audits and other work such as processing applications, dealing with incidents and status meetings with the companies.

A summary is provided below of the challenges we have faced, the activities we have

pursued and what we have achieved within our various main supervisory priorities.

#### 1.1 Overall assessment of results in 2010

We by and large implemented our plans for 2011, which were based in part on our main priorities and commissions from the ministry.

Our agenda in 2011 was again influenced by the accident on the US Macondo field in 2010. We will learn from this incident in terms of assessing improvements to the regulations, the use of supervisory methods and so forth. Work has included keeping ourselves informed about the extensive activities recorded in a number of investigation reports and studies following the incident, raising these in collaboration bodies such as the Safety Forum, and assessing the need for measures in the Norwegian petroleum industry.

Making the players more conscious of their responsibilities is the guiding principle for all our efforts to help ensure that the industry develops and maintains a high level of safety. We ask questions about – and thereby contribute to improvements in – that part of the management system in the companies which aims to ensure that they are capable of establishing on their own account that their operations are acceptable and comply with the regulations at all times.

No known quantitative methods are available for determining the impact of our overall exercise of our regulatory authority. Nevertheless, a number of indicators suggest that this supervision has a positive effect. Internationally, incidents such as the Macondo accident have prompted a number of official investigation teams to point to the North Sea nations and Norway as pioneers in terms both of the level of safety and of models for government regulation of the industry. Recommendations from these investigations underline the relevance and appropriateness of our main supervisory priorities for 2011, which are being maintained with minor adjustments in 2012.

The level of safety in the Norwegian petroleum industry is basically high. But it is not the case that this level, once achieved, will be selfsustaining. A continuous commitment is required to prevent it from deteriorating over time. Accordingly, the fact that the overall risk level in 2011 showed no improvement from the previous year, as measured through our work on the annual RNNP report, does not conflict with our assessment of our performance in reaching our goals. We again devoted resources in 2011 to developing and operating our website in an active and up-todate manner. We see that openness in the form of publishing audit reports, decisions and so forth, and the volume of information which is thereby made available, contribute to the

understanding of risk conditions and challenges in the industry.

It is also our view that the international collaboration in which we participate contributes to good safety results, particularly in a long-term perspective. The mechanism here is that the various national regulators, by exchanging experience and discussing regulatory requirements and methods for exercising their official duties, behave in the most harmonised possible way towards an industry which is international by nature. Such harmonisation also provides the industry with greater predictability in satisfying government requirements. Important arenas for international collaboration in 2011 remained the International Regulators' Forum (IRF) and the North Sea Offshore Authorities Forum (NSOAF). International collaboration is described in greater detail in chapter 2.

#### 1.2 Developments for accidents and injuries

No fatal accidents occurred during 2011 within our area of responsibility offshore and on land. Five people have died in occupational accidents over the past 10 years. Preventing fatal accidents in the petroleum industry is a mandatory goal.

A brief summary of the most important developments for accidents and injuries in 2011 is provided below. See the annual RNNP report published simultaneously with this document for a more detailed presentation of the risk picture.

#### 1.2.1 Risk picture for offshore facilities

Figures from the RNNP process for 2011 show that the overall risk for loss of life associated with major accidents is fairly stable. It has flattened out over the past five-six years at a level lower than in the previous five-year period. This risk value is calculated on the basis of data for incident types with a major accident potential. Since individual incidents with a high potential have a relatively substantial impact on the indicator in each year, the assessment is based on a three-year rolling average.

The number of serious personal injuries in Norway's offshore industry declined from 28 in 2010 to 26. Since the total number of hours worked was somewhat higher than the year before, the serious personal injury frequency was also reduced from 0.68 per million working hours to 0.59. This represents a statistically significant reduction compared with the previous 10-year period, and thereby means that the positive trend of the past few years was maintained. The decline in 2011 applied within the category for contractor personnel on production installations, while operator employees experienced a slight increase. Since contractor personnel have traditionally had a higher injury frequency than operator employees, it is positive that the former category now appears to be experiencing a decline. A minor increase was recorded in 2011 on mobile units, but the serious personal injury frequency remained below the average for the past five years.

No incidents occurred in 2011 which caused serious environmental harm. Well incidents represent the biggest contribution to the risk of environmental harm. While their number showed a positive downward trend for many years, a rise from 11 per annum to 28 was recorded between 2008 and 2010. A clear decline to 13 was once again seen in 2011. It is nevertheless desirable that the number of such cases continues to decline. We are accordingly following up these incidents closely, particularly to identify underlying causes related to management and control, experience transfer, learning from similar events and safety culture.

Eleven hydrocarbon leaks greater than 0.1 kilograms per second (kg/s) were registered in 2011. That represents a return to a declining trend after the number had been stable at roughly 15 per annum over three years. The figure for leaks was thereby back to roughly the 2007 level, when their occurrence had been substantially reduced through a purposeful multi-year commitment by the industry. Relatively large differences persist between operators in the frequency of such incidents.

Hydrocarbon leaks are divided into categories by the rate of leakage. None of the 2011 leaks fell into the largest category – in other words, greater than 10 kg/s.

The number of ships on a collision course increased somewhat from 2010. Compared with the number of installations now being monitored by the traffic management centre at Sandsli, however, the trend remains positive. The contribution to risk in 2011 was significantly below the mean figure for 2005-10. That must be attributed primarily to the effect of controlling sea areas around the installations by the traffic management centres.

Two collisions occurred between installations and supply ships in 2011.

Incidents related to structures and maritime systems showed an increase from three in 2010 to 10, of which seven related to mobile units. Three of the incidents concerned mooring systems, one the positioning system, three stability and four crack formation.

Two leaks occurred from risers within the safety zone of staffed installations during 2011. Both were from flexible risers.

The other indicators which reflect near misses with a major accident potential were at a stable level, with relatively small changes from 2011.

An extensive questionnaire-based survey was conducted for the sixth time among personnel

working on the NCS during 2011. The response rate was about 32 per cent, roughly the same as for the two previous surveys. However, the first surveys in the series had response rates of roughly 50 per cent. The number of responses was nevertheless sufficient to permit statistical analysis, including at the employee category level.

The main trend is that the safety climate was largely perceived to be on a par with previous years. However, several variables related to physical aspects of working conditions showed a negative development. These include exposure to noise and vibration, inadequate lighting, and various ergonomic aspects such as lifting and stressful working postures.

While the perception of danger related to various accident scenarios increased from 2005 to 2007, it declined from 2007 to 2009. That trend continued in 2011. However, the perceived threat of sabotage, terrorist activities and the failure of IT systems rose from 2009.

#### 1.2.2 Risk picture at land-based plants

Factors influencing risk at the land-based plants have clear similarities with corresponding factors offshore, but may also differ. Efforts have been made in the RNNP process to adapt indicators so that they reflect the risk picture at the land-based plants as closely as possible.

One factor special to the land-based plants is the possibility that third parties – in other words, people who live or are present in the vicinity – could be exposed to accidents.

Three incidents which fulfilled the criteria for serious personal injuries were reported in 2011, compared with nine the year before. While hours worked declined by about 24 per cent, the serious personal injury frequency was nevertheless substantially reduced. This figure for the land-based plants was 0.3 per million working hours, compared with 0.73 in 2010.

Eight hydrocarbon leaks occurred, unchanged from both 2009 and 2010. However, this figure is significantly lower than the 21 incidents recorded in 2008. None of the 2011 leaks ignited. We expect that the work being devoted to reducing the number of hydrocarbon leaks on the NCS will also yield results at the land-based plants.

Two minor fires and one case of toxic emissions were also reported, along with 27 incidents involving dropped objects. In addition came five accidents involving vehicles or other means of t ransport, three of which caused personal injury. Changes in the number of such incidents from 2010 were small.

The indicator for exposure to noise is calculated on the basis of noise levels and times spent in the noisiest areas as well as contributions from noisy work operations. It shows that a number of worker categories involved in process and maintenance activities experience exposures which exceed the limit value of 85 dBA.

A minor increase was recorded in the average noise indicator from 2010 to 2011. That primarily reflected the presence of a significantly larger number of surface treatment personnel at two plants than the year before. Since such workers have a significantly higher exposure to noise than other categories, this has a substantial effect on the average results. Exposure to noise is nevertheless lower than for comparable worker categories on offshore facilities.

We received reports of seven noise-related injuries from the land-based plants in 2011. By comparison, 836 such injuries were reported from offshore operations.

#### 1.3 Main priorities in 2011 – experience and results

#### 1.3.1 Barriers

The main purpose of barrier management is to establish and maintain barriers, and thereby to manage the risk picture faced at any given time by preventing undesirable incidents and/or limiting the consequences should such incidents occur. Barrier management thereby embraces processes, systems, solutions and measures which must be in place in order to ensure the necessary risk reduction and to meet the requirements for acceptable operation.

It accordingly occupies a key place in management by the companies of the overall risk in their business, and supervision in this area has accordingly long been one of our main priorities.

The issue is closely related to the subject of management and major accident risk, which has been another of our main priorities for a number of years. Initiatives launched and decisions taken by management will influence the operating parameters which are significant for barrier management, and thereby for major accident risk. Observations from our audit activities, experience from major accidents internationally and widely recognised accident theories often highlight the key role played by management in managing major accident risk.

#### BARRIERS

In this context, barriers mean systems of functions which can prevent or reduce harm in the event of an undesirable incident.

They can be divided into physical and non-physical. The latter embrace operational or organisation barriers. A barrier will often involve at least one physical element, such as a valve. Associated elements could, for instance, include a valve activator and its operational systems and components.

Barriers are built into designs and procedures in accordance with regulations and standards, with the aim of reducing the risk for people, the environment and material assets.

On the basis of regulatory requirements for barrier management, our supervision focuses on ensuring that

- barriers are established which can both reduce the probability of errors and hazards/accidents developing, and limit possible damage and drawbacks
- barriers continue to fulfil their function throughout the working life of the installation or land-based plant
- performance requirements are established for technical, operational and organisational elements required for the individual barrier to be effective
- strategies and principles are established for designing, using and maintaining barriers.

#### 1.3.2 Management and major accident risk

Experience from and knowledge of major accidents and incidents with major accident potential indicate that their causes relate to only a limited extent to shortcomings in the actual technology. On the contrary, they relate primarily to the ability of the companies and individuals to manage the risk they face. Audit results, experience from major international accidents and widely recognised accident theories point to the key role played by management for major accident risk. Our priorities in supervising how the industry prevents major accidents, including incidents with a potential for causing environmental harm, build on this recognition. As a result, our main priority has been directed primarily at management and control of major accident risk in the companies.

Managing risk at the management level involves ensuring that managers know what the risk comprises, that the companies have good processes for identifying, reducing, dealing with and communicating risk, that risk management forms an integrated part of company management systems, and that such management is treated as a significant element in management processes at all levels in the companies.

Our supervision in 2011 accordingly followed up how management at every level works to reduce major accident risk. We have given weight to

- a clear division of responsibility for preventing major accidents at and between various management levels and at various levels in the chain of players
- the knowledge of and attention paid to major accident risk in the company's operations, including the major accident risk associated With change processes
- capacity and expertise in the organisation tailored to dealing with the risk of major accidents
- learning from key serious incidents (including the follow-up to the Deepwater Horizon – DwH – accident)
- self-assessment by the companies of their overall work to reduce the risk of major accidents.

Under our main priority concerning management and major accident risk, we pursued a number of activities directed at a variety of players during 2011. These included audits on offshore installations and at landbased plants, work on technical projects, organisation of seminars, and participation in national and international conferences on managing major accident risk.

Clarity in responsibilities and roles has concerned relations between licensees, operators and contractors. In this context, we have devoted particular attention to new and smaller operators, especially in connection with their first consent application for exploration drilling.

Knowledge about and attention paid to major accident risk in operations by the companies have been directed at management and the way risk is managed in connection with change processes. Our follow-up under this heading has also illuminated the consequences of change projects on collaboration between employers and employees and on internal cooperative conditions.

When auditing management and managing resources and expertise, we have furthermore assessed whether the companies have sufficient capacity and expertise to handle the risk of major accidents.

Learning from serious incidents has embraced a number of activities related to the audit of managements and major accident risk, and our studies of such major incidents as DwH and Montara have occupied a key place here. On the basis of this work, we have prepared a comprehensive report with about 70 specific technical recommendations as well as more overall proposals directed at management of major accident risk.

On the basis of this report, we have addressed three main challenges facing the industry. These relate to organisation and management, risk management and barrier management. Where learning is concerned, we have also conducted audits of the way organisational factors are identified in accident investigations as well as a number of relevant player-specific activities related to follow-up of incidents.

#### 1.3.3 Preventing acute discharges and safe pollution reduction

On the basis of our role in accident prevention, we contribute to minimising the risk of acute emissions/ discharges through our overall commitment to maintaining a high level of safety in petroleum operations. This commitment covers the whole range of our activity, from continued development of the regulations, through supervising compliance with these, to monitoring risk trends over time and collaborating with the parties on important improvement processes.

We also follow up how new environmental requirements affect safety and the working environment as a consequence of innovative technology, novel working methods and new modes of organisation. We check that the companies, through good management and control, ensure that these changes do not have a negative impact – and preferably have a positive effect – on safety and the working environment. That in turn lays an important foundation for safe operation which minimises the threat of acute emissions/discharges.

In part through work related to development solutions and award criteria, we have contributed to ensuring that accident prevention is tailored to the risk potential – including in areas where the consequences of an accident for the natural environment would be more serious than usual. This means that preventive measures must relate to the possible impact on the environment.

By developing well-adapted regulations and by basing our supervision on these, we help to lay the basis for an important measure related to the climate issue. Our role with regard to carbon capture, transport and storage is to check that this approach is pursued in an acceptable manner with regard to safety and the working environment. We have initiated a review of relevant regulations to ensure that these are further developed so that they will also be appropriate for activities related to carbon capture, transport and storage. We have helped to improve the knowledge base and have involved ourselves with these issues in the context of both research and development (R&D) and the setting of operating parameters.

We are also making contributions to the technical

aspects of work on management plans for the various sea areas. Through our participation, we seek to ensure that accident-prevention measures receive the necessary attention in the planning process.

Our role where prevention of harm to the natural environment is concerned relates to the accident prevention aspect. It is a challenge that attention in the media and among the general public focuses particularly on the emergency response aspects of an oil discharge – in other words, measures to limit the consequences of a spill. Despite the importance of good emergency preparedness, a one-sided concentration on such measures may reduce understanding of the key consideration that preventing accidents which cause discharges is the primary way to avoid damage from an acute oil spill. We were again concerned in 2011 to convey this message in as many contexts as possible.

Viewed overall, we believe that we have helped to enhance the attention paid to the safety and working environment consequences of climate- and environment-related measures. We also take the view that more people than before have acquired a clearer perception that we play an important role in achieving national environmental and climate goals through our work on safety and the working environment in the petroleum activity.

#### 1.3.4 Groups particularly exposed to risk

In our audits directed at worker categories particularly exposed to risk, we have adopted an approach which involves a close link between actual risk conditions at group level and the operating parameters which could be significant for risk management. Seeing risk conditions as a whole, rather than simply factor by factor, has also been a consideration.

Our work on groups particularly exposed to risk during 2011 aimed to help the industry both to identify groups exposed to risk and to initiate measures for reducing risk for these categories. A total of 16 different groups have been assessed through this approach since 2007. For some categories, a high exposure to a number of risk factors coincides with inadequate operating parameters. We accordingly devoted particular attention again in 2011 to the insulation, scaffolding and surface treatment (ISS) trades, industrial cleaning and worker categories with a high exposure to noise.

The objective of our work in 2011 was to help ensure that

- the companies continue to develop an integrated picture of the risk of illness and injury faced by groups of employees, and make active use of new knowledge in a risk-based approach where efforts are directed at groups which have the greatest needs and which offer the biggest effect from the action taken
- companies implement risk-reducing measures directed at particularly exposed groups

- the industry develops good operating parameters for HSE work directed at groups exposed to risk
- employers and employees play a more active role in efforts to reduce risk for particularly exposed groups
- the risk of hearing damage and conditions for contract personnel are given emphasis in follow-up work by the companies
- work on an inclusive workplace is followed up in the petroleum industry.

Audits have shown that groups of contractor employees generally face more risk factors in their working environment than operator personnel, and that their exposure to these factors is higher. We see, too, that management elements intended to ensure a fully acceptable working environment are weaker for contractor employees than for operator personnel.

Our supervision has also revealed that such operating parameters as contractual conditions, financial terms and work organisation can affect the opportunities of contractor employees to reduce risk. At the same time, little attention has been paid to the significance of these operating parameters for the risks facing exposed groups.

In our purposeful supervision, we have given emphasis to helping raise awareness of the importance operating parameters may have for the risks facing exposed groups. Audits in 2007-10 have covered all the operator companies with installations in the production phase, and a total of 13 contractors. The goal has been to contribute to the development of operating parameters in the operator/contractor relationship which could reduce working environment risk.

Our supervisory activities in 2011 paid particular attention to operating parameters which are significant for the ISS trades and catering. In recent years, the operator companies have awarded direct contracts to ISS contractors which were previously sub-contractors to maintenance and modification contractors. One reason for this change has been that a direct contractual relationships lays a better basis and provides opportunities for a high level of HSE. In connection with our follow-up of the ISS trades, we have also been in contact with the Federation of Norwegian Building Industries (BNL), which organises the ISS companies. One result is that the BNL has become a member of the Safety Forum.

We registered in 2011 that our supervision appears to have contributed to increased awareness in the industry about the importance of identifying and following up groups exposed to risk, and the importance of operating parameters in that context.

HSE follow-up of contract workers was one of our priorities in 2011. This group includes the majority of foreign employees in the Norwegian petroleum industry, and we also know that the work it does is often associated with risk (ISS, for instance). We conducted audits during 2011 where both HSE supervision of contract personnel and follow-up of language and cultural differences have been issues.

These audits exposed non-conformities in the way contract workers are followed up for working environment risk. Inadequate clarification of roles and responsibilities for such follow-up was also identified. We will accordingly pay greater attention to responsibilities and roles in our continued work on following up contract personnel, and assess whether this should be addressed on a broader basis with the industry if the challenges prove to be general.

We also saw signs of improvement in 2011 at a number of contractors with regard to the way groups exposed to risk are followed up, and we consider it positive that many companies have established internal projects and implemented measures directed to a greater extent at groups particularly exposed to risk.

Furthermore, we gave emphasis in 2011 to reporting the results of our commitment to groups exposed to risk in various fora, conferences and seminars for relevant industry players.

Exposure to noise and chemicals has been an issue in more broadly based audits involving groups exposed to risk, and has been to some extent the s ubject of special follow-up activities.

#### **Chemical health hazards**

The industry's chemical project concluded with a summing-up conference in December 2011. Some project activities still remain to be completed.

An extensive portfolio of activities was pursued by the project during 2011, and a number of important reports, proposals for guidelines, courses and so forth were delivered. Our experience with the project in 2011 was largely positive, but we have highlighted the need for a clearer involvement by the companies when the results come to be translated into better practice.

#### Noise

A breakfast seminar on noise was held in February 2011, where we presented updated knowledge about the risk of hearing damage and the need for the industry to make a commitment to noise-reduction measures. The seminar brought together many participants and was broadcast on the web, which also makes it possible to view the footage at a later date. Several thousand people took advantage of this opportunity. The seminar is likely to have contributed to the initiative taken by the industry organisations, after discussions in the Safety Forum, on establishing an industry project dedicated to noise reduction. During 2011, we conducted audits of company work on noise and communicated the results actively in the industry.

#### 1.4 Other results from supervision

#### 1.4.1 Investigation of incidents

We have found investigation to be a good aid in learning about the causes of serious incidents and for focusing attention on causal mechanisms – technological, human and organisational. The primary purpose of an investigation is to help ensure that similar incidents do not recur and to contribute to disseminating experience through the industry which can support learning processes in the companies.

We investigated or initiated the investigation of three incidents in 2011:

- lifting operation on Gullfaks A (February)
- gas leak on Visund (April)
- fire on Valhall (July).

The investigation reports are available on our website.

#### 1.4.2 Player picture

The picture is characterised by Statoil as a big national player, a few large international players and some new and smaller participants. This diversity can represent opportunities for improving the level of safety, while presenting a challenge in itself. Many of the new operators and licensees are relatively small companies with limited capacity and expertise, and little or no experience of operations on the NCS. Most of these companies have so far pursued activities in the exploration phase, but some of them are now moving to an involvement in development and operation.

When following up the new operators during 2011, we paid particular attention to their first consent applications for exploration drilling and in connection with submitting PDOs.

The number of companies with operatorships on the NCS has continued to grow, rising from 14 in 2001 to 41 by 31 December 2011.

#### 1.4.3 Acknowledgement of compliance (AoCs)

Six AoCs were issued in 2011, and 46 mobile units had received such acknowledgements at 31 December.

In our view, the AoC system helps to create greater predictability for the industry, improves knowledge and understanding of the regulations, and enhances the sense of responsibility of mobile unit contractors. In certain cases, however, the resources we have devoted to considering applications are unnecessarily large because of deficiencies in the underlying documentation. This has resulted in lengthy communication with the applicant and thereby increased use of our time. Another consequence is that the contractors also incur costs.

However, we have seen a clear improvement – particularly during 2011 – in documentation from applicants who have been through this process on one or more occasions. Our reminders to the industry on the importance of good applications means first-time applicants are also submitting better-quality applications now than was the case in the early years of the AoC scheme.

An AoC is mandatory for the following units which are registered in a national register of shipping and are intended to conduct petroleum-related operations on the NCS:

- drilling rigs
- accommodation units (flotels)
- floating production, storage and offloading (FPSO) units
- well intervention vessels.

An AoC has been a requirement since 2004 for mobile drilling units to conduct petroleum operations on the NCS. The extension came into force on 1 January 2007. However, it has been resolved that an AoC will not be given for FPSOs when these are operated by the operator company.

# Acknowledgement of compliance (AoC)

An AoC is a statement from us that a mobile installation's technical condition as well as the applicant's organisation and management system are considered to comply with relevant requirements in Norway's offshore regulations.

More information about this a arrangement can be found on our website.

#### 1.5 Regulatory development

New regulations for HSE in the petroleum activity were adopted in the spring of 2010 and came into force at 1 January 2011. In order to facilitate their smooth implementation, we contributed in 2011 to the preparation of course materials and the provision of external courses through the competence in rules and regulations for the petroleum industry (RVK) project.

In our view, the introduction of the regulations was generally uncomplicated – in part because it had been well planned by the industry as well.

We did not carry out further work on the regulations in 2011, other than identifying the need for changes to the recently adopted provisions so that they also covered handling of carbon dioxide. **The RVK project** is based on a tripartite collaboration between government, employers and employees.

Responsibility for the educational arrangements and administering the course package rests with the Norwegian School of Management.

The RVK educational programmes are aimed at everyone required to engage directly or indirectly with the petroleum regulations.

These courses seek to enhance the understanding of individuals and companies about the importance of complying with regulations and requirements.

#### **Regulatory Forum**

The Regulatory Forum met three times in 2011. Comprising government, company and union representatives, this body deals with HSE regulation. We represent the government together with the Norwegian Climate and Pollution Agency (Klif) and the health authorities.

Based in part on comments received during the consultation on the recently adopted special HSE regulations for the petroleum industry, we have identified key issues through our dialogue with the industry i n the Regulatory Forum for more detailed discussion. The following issues were considered during 2011:

- the accessibility of the regulations, with attention paid both to actual access as well as "comprehension and readability"
- areas for using functional requirements in the regulations, and the scope of these
- the need for further clarification of the role played by the guidelines and standards in relation to the regulations.

Further subjects will be discussed in 2012 with the aim of producing an overall report from the review of these issues. However, we have made it clear that the final conclusions drawn from the discussions will be at the discretion of the government.

#### **Standardisation work**

The guidelines to the various regulatory requirements provide recommended solutions in part by referring to industrial standards (recognised norms) as one way of complying with the regulations. If such a solution is chosen, the regulatory requirement is normally regarded as fulfilled. A company which chooses an alternative approach must be able to document that this meets the regulation's requirements.

In order to obtain the best possible basis for determining which standards should be referenced in the guidelines, we participate as an observer in national, European and international standardisation efforts. We again gave priority in 2011 to following up national and international standardisation work affecting the level of risk in the petroleum industry. That also included following up relevant parts of the work being done in the Barents 2020 project, where we have concentrated on the working parties for emergency preparedness, rescue and evacuation, and for the working environment.

## 2. NATIONAL AND INTERNATIONAL COOPERATION

#### 2.1 Safety Forum

Established in 2001, the Safety Forum is intended to be the key tripartite collaboration arena between companies, unions and government for embedding strategic projects and processes related to safety in the petroleum activity. It accordingly serves as a consultative body in processes leading up to government White Papers affecting HSE in the industry and for others. The forum will have a strategic agenda at all times which reflects the industry's main challenges in the HSE area.

We are responsible for administering the forum, which is chaired by our director general. Emphasis is given to ensuring that its activities are transparent and well documented through detailed minutes, which are posted to our website. The forum draws on our own discipline teams for the presentation of issues and similarly on the industry in tripartite projects and p rocesses. This helps to strengthen our dialogue with the companies and unions.

The Safety Forum held five all-day meetings in 2011, one meeting to present the status revealed by the RNNP process, an annual conference and a company visit. In addition, participants were called to dedicated meetings on special issues which required particular commitment and attention.

#### Follow-up of the DwH disaster

Sharing information and experience from a number of processes, reports and projects in the wake of the DwH disaster occupied a prominent place in the Safety Forum's work during 2011. Reducing the risk of major accidents is one of several priority areas. The government, the companies and the unions have taken action after the disaster with an eye to possible consequences for operations on the NCS and to learn from reports and investigations associated with this incident. Information was exchanged at meetings of the Safety Forum, and status reports provided on the follow-up to this and other accidents in both national and international perspectives. We are keeping the other forum participants continuously updated on and involved with processes in international regulatory arenas such as the IRF and the NSOAF.

In the same way, a mutual exchange of information and debates have followed the EU initiative for a new directive or regulation on offshore safety in the region. In the wake of the consultation process, the Safety Forum's participants have collaborated on a common response to the EU proposal.

#### **Annual conference**

The Safety Forum's open annual conference brought together just over 200 key players in the petroleum sector to debate major accident and working environment risk in the industry. The new White Paper on working life was reviewed, status reports were provided on follow-up of the DwH disaster both by us and by the industry, and safety challenges in the far north were identified and discussed.

#### **Chemical working environment**

Following discussions in the Safety Forum dating back as far 2002 and many years of preparation and follow-up on our part, the chemical working environment in the oil and gas industry project was launched in 2007-08 as a tripartite collaboration. A wide-ranging commitment was made through both R&D activities and studies to achieve a knowledge boost for the sector. The project has helped the industry to close knowledge gaps and learn more about relationships between chemical exposure and health effects. After an investment of NOK 20 million over four years, the project was summed up and concluded during 2011. A number of the Safety Forum's members have been directly involved in managing the project, and the forum has been kept informed throughout about developments in the multitude of activities pursued.

#### **Noise and vibration**

Noise is one of the major working environment challenges facing the industry, and has been a key issue at Safety Forum meetings. We have provided regular briefings on our experience from audits in the area and data from the RNNP process, and have urged the industry to adopt measures. Given the status report we presented at the end of 2010 and the expressed expectations of industry action, both the Norwegian Oil Industry Association (OLF) and the Federation of Norwegian Industries recognised that they faced a problem which had to be tackled in an integrated way. During 2011, these two organisations led the way on a major commitment to overcome noise and vibration problems in the sector. The project on noise in the petroleum industry was established as a tripartite collaboration, where the industry will collectively address such issues as area-wide noise, noise from hand-held tools and helicopter noise. Work will also be done on barrier control of noise screening and insulation, and on new types of hearing protection.

#### Learning across industries and national frontiers

Experience transfer and learning across industries and national frontiers have been important considerations when the Safety Forum plans its annual company visits. The forum visited the Norwegian Institute for Energy Technology (IFE) in Halden and Vattenfall's Ringhals nuclear power station in Sweden during the autumn of 2012.

#### **Quality of safety training**

After the Petroleum Industry Centre for Quality Assurance of Competence (PSK) was closed down, the Safety Forum has questioned how the industry will now maintain a system for safeguarding the quality of safety and emergency response training. The OLF has undertaken to initiate specific measures.

#### Hydrocarbon leaks and well integrity - key issues

A number of debates were conducted in various fora between the government and the oil industry's interest organisations concerning the negative trend for hydrocarbon leaks identified by the RNNP process.

The industry got to grips with this trend and established a project in 2011 to reduce the number of such leaks. A "hydrocarbon leak network" was created to link a number of industry representatives, with the unions and the government as observers. Substantial resources were devoted to this work, which included analysing actual conditions/best practice and looking at experience transfer between companies on the NCS (with a dedicated seminar in September 2011) and from other regions (the UK).

Our work on gathering and processing information from eight operators responsible for the 193 temporarily abandoned wells on the NCS was another item on the Safety Forum's agenda in 2011. The relevant operators were asked to review the reports and take a position on the identified conditions, both specifically for the individual company and generally for the industry. Members of the Safety Forum are kept continuously updated on progress with this work.

#### **Continuous updating**

The various sides represented in the Safety Forum update each other on the progress of projects, processes and individual issues of strategic significance for the development of the risk picture in the industry. Cases subject to continuous follow-up in 2011 included the following.

The petroleum investigation into shift work, sleep and health (PUSSH) is a research project on the working environment and health among petroleum industry workers both on land and offshore. It is a collaboration between the National Institute of Occupational Health, the University of Bergen and the International Research Institute of Stavanger.

- Groups particularly exposed to risk, one of our four main priorities since 2007.
- Loss of anchors and position, being pursued by the mooring forum of the Norwegian Shipowners Association (NR) to achieve a reduction in the number of serious mooring incidents.
- The RNNP, where the Safety Forum is the reference body, reports on the status of key milestones set by the forum.
- Tripartite collaboration, arenas and projects. The working life White Paper identified tripartite collaboration as one of several priority areas. On that basis, the Safety Forum has made provision for a broader debate and follow-up during 2012.
- Joint PSA/Employment and Welfare Administration (NAV)/Norwegian Labour Inspection Authority project on improving work customi sation in the light of the inclusive workplace (IA) agreement is being followed up continu ously in the Safety Forum.
- Alcohol and drug misuse offshore has been the subject of an extensive debate in the Safety Forum after the OLF presented a proposal for a project to map potential misuse offshore through analyses of waste water.
- *The land-based plants* receive special attention from the Safety Forum, with experience from the L-8 HSE arena occupying a key place.
- A new White Paper to the Storting (parliament) has been followed up closely through status reports from the ministry to the Safety Forum, and through debates and recommendations.
- HSE and emergency preparedness in the far north have been recurring subjects at the Safety Forum's meetings over the past two years. As mentioned above, these were also among several key topics at the forum's 2011 annual conference.
- R&D on HSE in the petroleum industry. The Research Council of Norway was invited to the Safety Forum in 2011 to present the background for, intentions with and organisation of work on a new strategy on HSE research in the Petromaks programme. The Safety Forum will monitor developments in this area.
- The Safety Forum as an arena for collaboration. In the wake of the working life White Paper, and in line with the ambitions for the forum, the initiative was taken in 2011 on a broad debate concerning experience so far and a further development of this body.

#### 2.2 International

Cooperation with industrial countries consists first and foremost of the global collaboration in the IRF and the NSOAF. Both function well, and we regard this cooperation as a valuable contribution to the overall attainment of our goals. They are supplemented by bilateral collaboration at the specialist level with certain countries, particularly the UK, the Netherlands and Denmark.

#### 2.2.1 International Regulators' Forum (IRF)

This body was established in 1994 to be a specialist driving force for developing safety in the international petroleum activity through regulatory collaboration on joint projects and the exchange of knowledge and information. Current members of the IRF are the USA, Canada, Brazil, the UK, Australia, New Zealand, the Netherlands, Norway, Denmark and Mexico. Denmark was admitted as a member in 2011.

In addition to its annual member meetings, the IRF stages the International Regulators' Offshore Safety Conference every three years.

On the basis of the conclusions from the conference held in Vancouver, Canada, during October 2010, the IRF resolved at its annual meeting to initiate measures in five main strategic areas where the member countries agreed to use their resources to promote safety in the international petroleum sector. In this connection, the various members have accepted particular responsibility for individual areas. We undertook to be responsible for performance indicators, heading a working party which will continue to develop selected indicators in the RNNP process with a view to establishing an international platform for systematising information on hydrocarbon leaks, well incidents, collisions, fires, fatal accidents and serious personal injuries. We have also accepted responsibility for evaluating opportunities to help speed up further development of blowout preventers (BOPs), well control systems and instrumentation.

We hosted the extraordinary international conference held by the IRF in Stavanger during October 2011, with more than 200 delegates from nations around the world. A central purpose of the conference was to assess the status of all the investigations conducted after the two most recent major accidents – Montara off Australia in 2009 and the DwH disaster in the Gulf of Mexico during 2010.

Accidents in the petroleum industry appear to be attracting far greater international attention today than was the case earlier, and both we and the industry players in Norway must therefore be conscious of their responsibility to contribute. West Atlas (Montara) and DwH (Macondo) have given international collaboration on strengthening safety in the petroleum industry far great significance. It will accordingly be important for us to contribute actively to this work. We committed substantial resources in 2011 to keeping abreast of follow-up activities in the wake of these two accidents, because gathering and exchanging information, sharing knowledge and professional updating between regulatory counterparts and their contacts with the industry are considered to be crucial in helping to prevent major accidents.

### 2.2.2 International Committee on Regulatory Research and Development (ICRARD)

ICRARD was established by the IRF in 1994 as a global arena for sharing information and experience from HSE research in the petroleum sector. To help ensure that research activities are known and made available across continental shelf boundaries, we established the www.icrard.org website in 2004 on behalf of the forum. This site is regularly used by member countries to publish R&D-related news stories. It also has a unique search engine which looks only for information on selected websites in the member countries. The site received almost 2 700 hits from 84 countries in 2011, and attracts roughly 150 unique visitors per month. During 2011, the IRF paid particular attention to R&D activities related to aging and producing-life extensions, carbon capture, transport and storage, and deepwater drilling.

#### 2.2.3 North Sea Offshore Authorities Forum (NSOAF)

Safety regulators in the UK, the Netherlands, Germany, Denmark, Ireland, Sweden, the Faroes and Norway participate in the NSOAF.

Over the years, working groups appointed by the forum have conducted many projects aimed at identifying common challenges and adopting joint measures which can contribute to improving the level of HSE. Many challenges are of such a nature that they demand common action to achieve improvements. The industry is international, and many companies operate across continental shelf boundaries, which requires the regulatory authorities to act in the most coordinated possible manner. The regulators have limited resources, and exchanging experience, sharing information and collaborating permit more optimum use of these.

From time to time, the Norwegian regulations are alleged to set safety standards which drive up costs compared with offshore requirements in other countries. It is important in this context to have a good understanding of the way each offshore regulator enforces regulatory requirements. The NSOAF collaboration contributes to this.

The NSOAF currently has four working groups, on training, wells, the EU/EEC and HSE respectively.

A substantial proportion of the NSOAF's work - is conducted through the working groups appointed by its annual meeting. The latter receives reports from the various working groups and decides on the work programme for the coming period, including the possible winding up or creation of new working groups. Four such groups were in operation during 2011, covering HSE management in general, safety training, drilling and wells, and the exchange of information concerning the relationship of member countries to the EU. The NSOAF has also been extensively consulted by the European Commission on safety issues.

The NSOAF's members cooperate with the European Diving Technology Committee (EDTC) and the OMHEC.

#### 2.2.4 European Diving Technology Committee (EDTC)

Some 20 European countries belong to the EDTC, and each member state can appoint one civil service, union, industry and medical representative. Norway has appointed a representative from each of these four categories, with the authorities represented by us. The EDTC's principal activity is work on joint documents which are posted to its website. Although its scope is confined to Europe, documents produced by the committee are also used as references in other parts of the world. One example is the document on diver expertise, which has been produced and issued together with the International Marine Contractors' Association (Imca).

#### 2.2.5 Offshore Mechanical Handling Equipment Committee (OMHEC)

The OMHEC brings together specialists on crane and lifting operations, and holds two meetings a year. Personnel from Denmark, the Netherlands, the UK and Norway participate in the committee's work, and each nation can appoint up to four representatives. Its principal activity is work on joint documents, such as common recommendations on issues related to cranes and lifting. These include recommendations on expertise requirements for personnel and competent persons, and on educational standards.

#### 2.2.6 Bilateral collaboration with Russia

Our collaboration with the Russian authorities represents an extension of the former Boris project, and is supported by the Ministry of Foreign Affairs.

We maintained our contact with Rostekhnadzor – the Russian regulator responsible for technical safety in the petroleum sector – with a limited level of activity in 2011. Official responsibility for HSE in Russia is otherwise spread over various government agencies we are not in contact with. However, we are in touch with the Norwegian embassy and players familiar with Russia's petroleum sector.

The Rostekhnadzor management proposed a meeting in 2011 to exchange experience on regulatory roles and responsibilities in the offshore petroleum industry. This took place during the autumn in connection with the inspection of a drilling rig which was to work in far northern waters. During that process, presentations were given by the developer and operator on HSE conditions which must be dealt with in the far north.

In addition to presentations on and discussions about regulatory responsibilities in the petroleum sector, subjects covered included principles for developing regulations and supervisory methods, and learning from and follow-up of major accidents such as DwH. As a follow-up to work in the Barents 2020 project, we also continued discussions on the use of international standards in national regulations.

We contributed to a workshop on Norwegian regulatory requirements for preventing emissions/discharges and experience on the Norwegian and Russian continental shelves to a seminar organised by the marine environment group of the Norwegian-Russian Environmental Commission. This meeting took place at Moscow's Gubkin University in November.

We have also participated in the Barents 2020 project led by Det Norske Veritas. This initiative by the Norwegian government is partly funded by the Ministry of Foreign Affairs. It has conducted a review of existing national and international standards to identify standards and areas where changes are needed in order for these to set acceptable norms for HSE and the working environment in far northern waters. Results from this work have been submitted partly to technical committee (TC) 67 at the International Organisation for Standardisation (ISO) and partly to the Norwegian and RusSian fora involved in assessing the possible implementation of the proposals in national standardisation work.

#### 2.2.7 Development cooperation

The Norwegian government established its Oil for Development (OfU) project in 2005. Within this assistance programme, we help developing countries to establish an administration which can handle risk in the oil and gas sector. Operational responsibility rests with the Norwegian Agency for Development Cooperation (Norad), which seeks technical support in this work for a number of specialist agencies. Safety forms part of most OfU programmes. We contribute to a number of these, primarily together with the Norwegian Petroleum Directorate (NPD), the Norwegian Climate and Pollution Agency (Klif) and the Petrad foundation.

*Cuba*. We collaborated with Petrad to assist Cuba's safety regulators for the petroleum industry. Several week-long seminars were conducted on various safety-related issues. Subjects included lessons from the DwH accident and safety challenges for deepwater exploration drilling in the Cuban part of the Florida Straits. The lack of regional collaboration has been an additional challenge.

*Ghana*. Together with the NPD and Petrad, we provided assistance with HSE related to organisational and regulatory development as well as more operational aspects of the petroleum industry. We joined forces with Petrad to stage a week-long seminar on safety in the petroleum sector for west African nations Angola, Ghana, Liberia, Sierra Leone, Ivory Coast and São Tomé et Príncipe. This programme was a big success, and a regional working party has been established to take this further.

Tanzania. Large gas discoveries have been made in Tanzania, and the population has a big need for clean energy. We are contributing to the development of an official administrative structure to handle the safety challenges of exploration drilling and production in deep water. No safety regulator currently sets requirements for the technical condition of facilities or how activities are to be organised and implemented in the country. Assistance is also needed with problems related to corrosion and maintenance on the Songo Songo field with associated pipelines.

*Uganda*.We are contributing to organisational, regulatory and expertise development for strengthening HSE work in Uganda's petroleum sector.

Vietnam. We have pursued assistance work in Vietnam since 1996 together with such partners as PetroVietnam and Klif. This project has contributed to developing an HSE management system for the country's petroleum sector. We have seen very positive progress in this area in Vietnam during the period. PetroVietnam has expanded from 8 000 employees to 47 000, and must be regarded as the engine driving development of the country's business community. The third and last phase of the project was completed in 2011.

All goals were reached, and the work has received positive evaluations.

Other assistance work. We also contributed to assistance under the OfU programme together with government agencies in Mozambique, Angola, Sudan, South Sudan and west Africa. Our contribution was largely to provide content for programmes run by our partners in development collaboration.

In Latin America, our support was directed particularly at Bolivia as a main partner for Norwegian development collaboration. Together with the Bolivian authorities, the NPD and Klif, we worked on securing and cleaning old wells and preventing environmental degradation, as well as expertise development and regulatory work. Nicaragua also faces major challenges in connection with deepwater drilling, and we contributed here with the NPD.

We also gave a number of speeches to delegations from nations worldwide under the OfU programme in order to inform them about the Norwegian management model and safety regime for the petroleum sector.

#### 3. PUBLIC AFFAIRS AND COMMUNICATION

#### 3.1 Our information policy

Information supplied to the industry, the media and the public at large will be characterised by openness, accessibility and accuracy. Given the special position occupied by the oil and gas industry in Norwegian society, we will provide information about its activities and answer questions to the extent that this is possible and acceptable given our role as a regulatory authority and our overall objectives.

#### 3.2 Media management

All media enquiries are handled in accordance with the principles of our public affairs policy as specified above. In addition to direct contact with the media, we use our website to provide information about our follow-up of such matters as undesirable incidents. As a general principle, we publish specially-written articles only about our own activities – the launch of our own investigations, the submission of inquiry reports and so forth.

#### 3.3 The internet

The www.psa.no website is one of our most important channels for spreading information about who we are and what we do. Press releases, technical articles and interpretations of regulations are posted regularly to the site, which also hosts a dedicated section for the Safety Forum (www.psa.no/safetyforum).

In addition, information on all our supervisory activities is presented on the site in the form of articles. We do this both to make our work and priorities visible, and to make it easier for the companies and the industry to use the information for education and experience transfer. The bulk of the material is published in both Norwegian and English.

Publication of supervisory activities on the web in English includes:

- investigation reports
- summaries of our audit reports
- notices of orders and orders
- consents
- acknowledgements of compliance (AoCs)
- circulars to the industry (related to audits).

Apart from complete audit reports, all material is posted in both Norwegian and English.

All relevant statutes and HSE regulations for the Norwegian petroleum sector, with associated guidelines and interpretations, are available at www.psa.no/ regulations.

Our site has become one the most-used sources of safety-related information for the NCS, with roughly 35 000 hits and up to 18 000 unique visitors every month. We also offer a subscription service for news, supervisory information and interpretation of regulations, and had some 5 500 subscribers at 31 December 2011.

We make active use of our website to highlight our role, priorities, activities, audit results and so forth. In our view, the openness signalled through such publication, and the volume of information which is thereby made available to the world at large, represent a substantial contribution to understanding risk conditions and challenges in the business.

Public interest in our activities is reflected in part through the number of requests for access to documents, which is rising sharply. We responded to 4 299 such requests in 2011, compared with 2 784 the year before. Of the 2011 applications, 160 were denied or approved with restricted access.

#### Web words

#### Hits

Hits on our website represent the number of times somebody has searched our web pages and found what they were looking for.

#### **Unique visitors**

This expresses the number of people who have visited our website from individual PCs (IP addresses). However, many individuals or PCs may be behind each such address,

depending on the IT solution chosen for the user location.

#### 3.4 The Authorities communication channel

The former AuthorityWeb was integrated in License-2Share (L2S) in February 2011 and changed its name to Authorities. L2S is a shared solution for processes related to the administration of production licences and official correspondence between the petroleum industry and the government on the NCS. This solution is managed by the Exploration & Production Information Management Association (Epim).

Authorities provides a secure two-way web-based communication channel for exchange of formal electronic correspondence between the government and the petroleum industry, and can also be used for inter-agency correspondence. It has been provided with a high level of security, so than only sender and recipient can read the content. This solution offers full traceability of all documents exchanged.

#### 3.5 Courses and speeches

To contribute to knowledge transfer in the HSE area and to provide information on our regulatory role, activities and priorities, we consider it important to participate with papers and presentations in key strategic arenas such as conferences, courses and so forth.

We also stage our own courses and seminars to focus attention on areas which represent safety challenges.

The following open conferences and seminars were organised by us in 2011.

When accidents threaten the environment – on major accident risk in an environmental perspective. In collaboration with Klif.

Company management and major accident risk – on the way management creates an overview of, insight into and influence on the "health" of the company's processes, which not least develops qualified personnel, capacity, and technical and operational integrity.

- Annual Safety Forum conference on future challenges, including learning lessons from the DwH disaster, the status of tripartite collaboration, and the challenges presented by increased petroleum activities in the far north.
- Competence in rules and regulations after 10 years – on experience with and future plans for the RVK collaboration on education in the regulations between the industry, the government and the unions in the oil and gas industry.
- System approach to safety and integrity for steel and flexible pipelines and risers – with the focus on integrity in pipelines systems from a system perspective.
- Contractor seminar on the role and responsibility of contractors in the petroleum indus try and collaboration between management and unions among contractors in general and in the individual company.
- *Lifeboat seminar* on resolved and unresolved challenges in the freefall and davit-launched lifeboat projects, new evacuation regulations and the next generation of lifeboats.

Many of our managers, technical experts and other key personnel were again in demand during 2011 to speak at courses and conferences as well as to chair and participate in a number of committees for such programmes nationally and internationally.

#### **4 ORGANISATION**

#### 4.1 Staffing

We had 169 employees in service at 31 December 2011. Women make up 46 per cent of the staff, and men 54 per cent. The proportion of women in senior posts is 42 per cent, and we are constantly working to achieve an even balance between the genders in all job categories.

The average age of the workforce is 53 years for men and 47 for women.

Sickness absence in 2011 was 3.4 per cent, compared with 3.9 per cent the year before.

Ten permanent employees resigned in 2011 and 12 new appointments were made to permanent positions. The average age of new recruits was 41 years.

#### 4.2 Senior management

comprises our director-general, Magne Ognedal, and five area directors. Our press spokesperson is affiliated with the senior management team. The communication and public affairs function reports directly to senior management.

#### 4.3 Supervision

Teams responsible for supervision are organised in six groups covering various types of players in the activity. Contact persons have been designated in the relevant supervision teams to provide a fixed point of contact for the various players. Each team is headed by a supervision coordinator with product responsibility and formal decision-making authority.

The responsible managers are Ingvill Hagesæther Foss and Finn Carlsen, as the directors of supervisory activities.

#### 4.4 Professional competence

Our professional competence is divided into six discipline areas, each with its own leader responsible for human resources and for expertise development in their area. These areas were:

- drilling and well technology
- process integrity
- structural integrity
- logistics and emergency preparedness
- occupational health and safety
- HSE management

The discipline areas allocate human resources to supervisory activities and multidisciplinary projects.

Øyvind Tuntland, the director for professional competence, is the responsible manager.

#### 4.5 Legal and regulatory affairs

The regulatory development activity embraces:

- development of regulations and standardisation
- cooperation with government authorities in other countries and the responsible Norwegian ministry over regulatory development
- incorporating and interpreting European regulations under the European Economic Area agreement
- development of collaboration and coordination agreements
- managing public consultation processes relating to regulatory development.

The responsible manager is Anne Vatten, director of legal and regulatory affairs.

#### 4.6 Operational support and development

is responsible for our in-house operation. It also provides support for developing our own organisation and follows up our sub-contractors.

- The activity embraces:
- human resources
- organisational development
- company occupational health service
- finance and contract management
- internal security and reception
- building coordination
- intranet and web information system
- library
- document centre
- system development/electronic processing
- canteen
- operation of shared services for the NPD and Petrad.

The responsible manager is Gerd Randi Kaland, director for operational support.

#### 5. KEY FINANCIAL FIGURES

The Storting determines both expense and income appropriations for the PSA as part of the central government budget. As a government agency, the PSA submits its accounts to the Ministry of Finance in accordance with the ash accounting principle.

#### Expenses

Operation of the PSA cost NOK 215.9 million in 2011. The table show how this breaks down between the main items. Corresponding figures for 2010 are shown for comparative purposes (all figures in NOK).

	2010	2011	Endring
Pay and benefits	120 513 103	126 682 879	5.1%
Goods and services	59 656 678	63 118 751	5.8%
Total operating expenses	180 169 781	189 802 630	5.3%
Contract-related pay and benefits	1 470966	1 728 815	17.5%
Supervising the petroleum activity	19 054 376	23 386 826	22.7%
Contract and collaboration activity	-	-	
Total special operating expenses	20 525 342	25 115 641	22.4%
Major equipment purchases	2 067 566	1 023 510	(50.5%)
TOTAL EXPENSES	202 762 689	215 941 781	6.5%

#### Income

The PSA had an income of NOK 97.3 million in 2011, which breaks down as follows:

	2010	2011	Endring	
Contract and collaboration income	1 274 318	2 746 425	115.5%	
Refunded supervisory expenses	64 474 075	90 071 922	33.5%	
Miscellaneous income	5 817 133	1 907 942	(67.2%)	
Conference/seminars	32 100	36 600	14.0%	
Refunded labour market measures	2 332	4 080	75.0%	
Refunded maternity/adoption pay	1 027 351	906 200	(11.8%)	
Refunded trainees	49 431	52 178	5.6%	
Refunded sick pay	1 322 704	1 532 260	15.8%	
TOTAL INCOME	76 999 444	97 257 607	26.3%	