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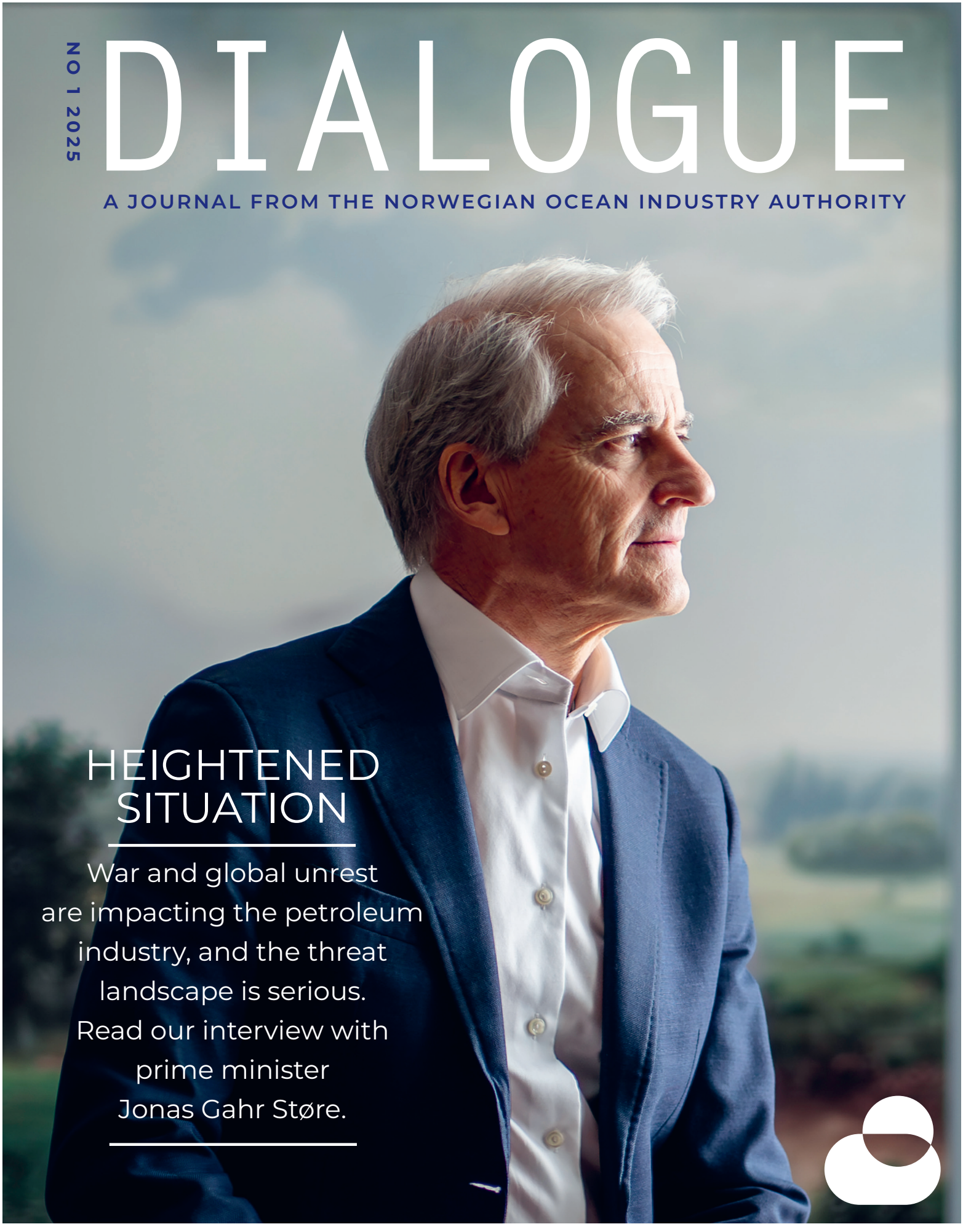
DIALOGUE

A JOURNAL FROM THE NORWEGIAN OCEAN INDUSTRY AUTHORITY



HEIGHTENED SITUATION

War and global unrest are impacting the petroleum industry, and the threat landscape is serious. Read our interview with prime minister Jonas Gahr Støre.

TOPICS: The threat landscape • Artificial intelligence • The *Kielland* disaster

"We are living in the most serious security policy situation since World War II," prime minister Jonas Gahr Støre acknowledges. You can find the full interview beginning on page 8.

(Cover photo: Heiko Junge/NTB)

CURRENT AND LONG-TERM

Good safety work is about prioritizing targeted, long-term efforts - whilst dealing simultaneously with current issues. It is about having the resources to dig deep, but also about acknowledging that everything is connected, that various risk factors are mutually impactful, and that we must balance attention to detail with a steady overview and holistic management.

In this edition of *Dialogue*, we give you an insight into how the security-related political situation and the serious threat landscape affect the petroleum industry. This is a matter of high priority, and one on which Havtil works extensively.

Technological solutions based on artificial intelligence (AI) are also highly relevant in our current environment, and development in the field is rapid. Havtil monitors the various companies' work in this area closely and ensures that the importance of security associated with AI is and will continue to be sufficiently emphasised.

But in parallel, good and focused work must be carried out on the more long-term tasks within major incident risk and the working environment. This is what the new Havtil director, Sigve Knudsen, calls the bedrock of safety work.

This bedrock consists of many different areas - such as maintenance, well control, hydrocarbon leaks, personal injuries and chemical exposure. The common denominator between them all is that they require continuous attention and dedicated efforts from the companies.

Enjoy!
Øyvind Midttun,
editor

CONTENTS

”I am proud and humbled to take on the task - and I am highly motivated to do so” says Sigve Knudsen (52), who will direct Havtil for the next six years.

ON SOLID GROUND

Current safety challenges must be addressed, whilst simultaneously prioritising the bedrock of safety work, emphasises the new Havtil director general. →

Text: Øyvind Midttun **Photo:** Elisabeth Kjørmo

On 1 May this year, Sigve Knudsen took over as director general of Havtil for a fixed term of six years. With his experience from multiple management positions in the agency, he brings an in-depth knowledge of both the administration and the industries within the agency's area of responsibility.

"Havtil has an important societal mission, a clear mandate and a wide range of means which enable us to influence safety developments.

In short, this is an interesting and significant job. I am proud and humbled to take on the task - and I am highly motivated to do so", he says.

OVERVIEW AND CONTEXT

Knudsen sees a number of current challenges facing operations on the Norwegian continental shelf. He emphasises that these must be managed appropriately but also points out the importance of balance in the management of the overall risk picture faced by the companies.

"The most important challenge now may not be a single case or area, but our ability to maintain an overview and holistic risk management, and to understand the connections. The individual risk factors in health, environment, safety, emergency preparedness and security are not isolated entities, but are closely linked and impact each other.

"Technological development often has a positive effect on safety, but the use of artificial intelligence can clearly also present challenges in the future. The geopolitical security situation and the threat landscape within the petroleum industry are serious, and dealing with these issues is high on the agenda. This is something to which both the companies and we at Havtil dedicate a lot of resources", says the new director general.

BEDROCK

"At the same time, we must be attentive to *the bedrock* of our safety work. I am referring to the prevention of injuries and incidents, classic topics within major accident risk and the working environment, such as maintenance, well control, hydrocarbon leaks, personal injuries, chemical exposure and so on. These are areas which require continuous focus and concerted efforts from the companies to ensure safety and further improvement. We simply cannot risk falling behind here," Knudsen emphasizes.

OIL AND GAS

The new Havtil director general is also keen for the authorities to prioritise their efforts appropriately. Although the agency has been assigned new areas of responsibility in addition to oil and gas, the petroleum industry remains the largest industry on the Norwegian continental shelf - and will continue to be so for a long time to come. And even though it is the companies that are responsible for safety - that allocation of responsibility is indisputable - Knudsen is clear that the role of the authorities must not be downplayed.

"We would not have reached the point we are at now without high safety ambitions, clear regulatory requirements and strong supervision. That is how it is, and that is how it must continue to be.

"Havtil has an important role. We must be strong in our field of expertise and clear in our manner of supervision. It is our job to set requirements and check that the companies take responsibility, manage risk, and ensure continuous improvement. In this way, we are helping to achieve the Government's ambition for the petroleum industry and the other ocean industries on the Norwegian continental shelf to be world leaders in health, safety and the environment."

BALANCING ACT

Being Havtil's director general means taking decisions and ensuring a direction that stands firmly on a safety and working environment foundation. At the same time, it means balancing the initiatives, wishes and requirements of different parties.

Opinions on safety – and on which path to reaching the goal is most appropriate – can vary. Knudsen has led the tripartite cooperation in the Regulatory Forum for a number of years and has experience of both consensus and major differences between the arguments.

"In theory, the parties share the same goal; Everyone wants a high level of health, safety and environmental standards. But in practice, based on the interests of the parties, we may differ slightly in how we view the most appropriate path to reaching that goal. It is then important to understand the individual parties' basis for the positions they take or the opinions they hold, and to help discuss and shed light on the issues arising from differing points of view.

"Collaboration is demanding in the sense that not everyone thinks the same way about what is best. But if we understand each other, we often arrive at solutions which lead us to the goal, even if everyone is not necessarily one hundred percent satisfied," Knudsen points out.

"And the goal is not necessarily for everyone to agree with Havtil. Provided we have a good professional and administrative justification for the choices we make, we must be able to withstand resistance and be engaged in discussions.

"The primary objective is to do the job we have been assigned to do. In short: Solve the societal mission. This is what is important – and what drives us." ■

"The goal is not necessarily for everyone to agree with Havtil. Provided we have a good professional and administrative justification for the choices we make, we must be able to withstand resistance and be engaged in discussions."

Havtil is helping to achieve the Government's ambition for the petroleum industry and the other ocean industries on the NCS to be world leaders in HSE.

IMPORTANT ROLE

Minister of Energy Terje Aasland believes that with Sigve Knudsen as director general, Havtil has gained an experienced leader with a valuable insight into both the organization and the stakeholders in the ocean industries.

"Havtil has an extremely important role to play in these times in which we find ourselves," the Minister of Energy emphasizes.

"The production and transport of Norwegian oil and gas has become increasingly important to European energy security. In light of this, safety on the Norwegian continental shelf has become even more significant.

"Simultaneously, secure operations and a safe working environment are becoming integral to the development of new ocean industries," says Aasland.

The Ministry of Energy (ED) is the parent ministry for Havtil and thus the Havtil director's employer. ■

URGES VIGILANCE

Text: SMK/Havtil **Photo:** Heiko Junge/NTB

War and global unrest are impacting the petroleum industry. Prime minister Jonas Gahr Støre is focused on Norway´s ability to ensure a secure and stable energy supply, while simultaneously protecting those working in the country's largest industry. →

The situation on the NCS has escalated, according to prime minister Jonas Gahr Støre, who advises employees on platforms and onshore facilities to be vigilant and observant.

"We are living in the most serious security policy situation since World War II," says prime minister Jonas Gahr Støre.

"Russia's war of aggression against Ukraine continues at full force. Israel has resumed acts of war in Gaza. At the same time, we are seeing turbulence globally, including in the economy, as a result of the new US administration," he points out.

"Cooperation with our European neighbours and allies is particularly important in times of turbulence," the prime minister emphasises, and states that international developments are having a direct impact on the Norwegian petroleum industry. And that the threat landscape is serious.

VIGILANCE IS NOT DISTRUST

"We have an escalated situation on the Norwegian continental shelf as well. The intelligence, surveillance and security services' threat assessments show that there is a need for increased vigilance, and that there is also a generally increased likelihood of sabotage against us in Norway.

"At the same time, it is important to emphasise that there are no indications of direct threats targeted at Norwegian oil and gas installations, neither onshore nor on the continental shelf. From a government point of view, national security takes top priority," the prime minister states.

His advice to those working on platforms and onshore facilities is to be vigilant and observant. Gahr Støres encourages everyone to report anything unusual - and emphasizes that vigilance does not equal distrust.

"This is about making sure that surroundings and systems are as they should be. It is about reporting faults in systems or abnormal incidents. This will result in increased security for everyone."

MAIN SUPPLIER

Gahr Støre emphasises the significance of the Norwegian petroleum industry regarding stable energy deliveries to Europe.

"The Norwegian continental shelf plays an important role in Europe's energy security as the most important supplier of gas to Europe since Russian gas was sidelined. We will continue to do so in the future.

"The Norwegian continental shelf plays an important role in Europe's energy security as the most important supplier of gas to Europe since Russian gas was sidelined. We will continue to do so in the future."

"The government will continue to facilitate a high level of activity on the Norwegian continental shelf," he says.

"At the same time, safety for those working in the industry is paramount, and this must be reflected in the working environment.

"In Norway, we have a good starting point. Over time, the stakeholders, labour organisations and authorities in the petroleum industry have worked on systematic prevention and improvement. This has ensured us a high level of safety on the Norwegian continental shelf.

"However, we also know that good, preventive work must continue to be prioritised every single day," the prime minister points out.

OPPORTUNITIES

Speaking on the balance between stable energy deliveries from the Norwegian continental shelf and the government's ambitions for the green transition, Gahr Støre emphasises the need for Norway to supply low-emission gas deliveries whilst investing simultaneously in renewable energy. He also sees the development of offshore wind as an opportunity for the supplier industry.

"The Government is keenly focused on stable energy supplies and energy security from the Norwegian continental shelf in the years to come.

"We also know that the development of offshore wind in the North Sea Basin will provide further opportunities for the supplier industry, which increasingly supplies to both the oil and gas and the renewable industries," he says.

APPLIES TO THE ENTIRE SHELF

The prime minister highlights the importance of stringent safety requirements and close dialogue between the authorities and the companies.

"This applies to the entire NCS, including the northernmost sector and those areas bordering Russia.

"Even though we are particularly focused on the High North in the times we live in, stringent safety requirements apply to all petroleum activities regardless of location," he points out.

"In recent years, the Government has intensified its efforts on both safety and security work on the NCS.

"The companies are responsible for the safety of their own installations and facilities, and for implementing risk-reducing measures. Cooperation at government level, public-private cooperation and civil-military cooperation have all been reinforced in recent times." ■

A custom painted F-16 over Kristiansand Airport Kjevik at the commemoration of 100 years of Norwegian military air power in 2012.
(Photo: Tor Erik Schrøder/NTB)

In the autumn of 2022, the Norwegian Home Guard assisted the police by providing security reinforcements at oil and gas facilities following several drone sightings and the Nord Stream leak in the Baltic Sea. The picture is from Gassco's onshore facility at Kårstø in Rogaland.

MEASURES MUST BE ADAPTED TO THE THREAT LANDSCAPE

Text: Øyvind Midttun **Photo:** Carina Johansen /NTB

This year's national threat assessments paint a more serious picture of the situation on the Norwegian continental shelf. At Havtil, we closely monitor the companies' work on security - and highlight the need for adapted measures.

Threat and risk assessments from the Norwegian National Security Authority (NSM), the Norwegian Police Security Service (PST) and the Norwegian Intelligence Service (E-tjenesten) confirm that the threat landscape on the Norwegian continental shelf is influenced by a continued heightened risk.

"The reports from NSM, PST and the Norwegian Intelligence Service indicate that we are facing a challenging threat landscape. This also applies to the petroleum sector," says Ingvild Klaveness, head of security at Havtil.

"The industry has worked on security for many years. Work standards in this field are high, and we have seen a positive development. However, we also see the potential for improvement, both in terms of analyses, measures and expertise," says Klaveness. She points out that a continued, concerning threat landscape also places greater demands on the companies' security work – and that measures must be tailored to the current threat landscape.

"Continuous improvement is a key term. This is especially true in the situation we find ourselves in," she says, and points out that the threat assessments provide a valuable insight in terms of managing the threat landscape and implementing risk-reducing measures.

"The companies hold a major responsibility within the field of security, and we will continue to keep a close eye on this area," states Klaveness.

ESPIONAGE AND SABOTAGE

The open threat assessments from NSM, PST and the Norwegian Intelligence Service →

confirm that Norway is an important supplier of gas and energy to Europe and that petroleum infrastructure both offshore and onshore are of interest to foreign states.

PST points out that state intelligence activities and influence/sabotage using so-called proxy actors will colour the threat landscape. Proxy actors are defined as something or someone acting instead of, with authority from, or as a representative of others.

The petroleum industry is particularly exposed to espionage and sabotage on subsea cables, gas pipelines, facilities and installations. The consequences of such actions can be significant for both the industry and national security.

PST believes it is "likely that Russia may see the benefit of carrying out sabotage actions against targets in Norway in 2025". They also opine that Norwegian-owned energy infrastructure could be the target of such actions.

Furthermore, PST emphasizes that Russia poses the greatest threat within maritime covert intelligence activity.

The petroleum sector has experienced various incidents, such as drone activity and vessels operating within proximity to facilities or subsea infrastructure. This type of operation may be undertaken to map preparedness and crisis management.

Havtil supports and follows up the industry in the event of this type of incident.

ACTION REQUIRED

In *Risk 2025*, NSM makes it clear that it is important to progress from words to action:

"Critical infrastructure such as fibre optic cables, power lines and gas pipelines are examples of assets that we will never be able to fully secure. Backup solutions and optimal repair preparedness are therefore just as important as security measures", writes NSM, pointing to the significance of prioritizing backup solutions and resilience, monitoring and detection measures, as well as practising contingency plans.

This year's risk and threat assessments also underline the persistent risk associated with the cyber domain and the need for continuous development of measures and vigilance.

In addition, it has been indicated that artificial intelligence (AI) is being developed as a tool by malicious actors with and without in-depth technical expertise.

This year's risk and threat assessments emphasise that the industry is particularly vulnerable to espionage and sabotage on subsea cables, gas pipelines, installations and facilities.

"AI has increased in popularity and accessibility in recent years. The opportunities resulting from AI development are significant. At the same time, the opportunities for the malicious use of such technology are increasing correspondingly," NSM points out.

AI is increasingly being used for attacks in the cyber domain and to identify vulnerabilities in systems. This is happening at the same time as the information values from the industrial ICT systems are being made available in the cloud to facilitate the widespread use of AI in the industry.

VULNERABILITIES

In 2024, Havtil found that vulnerabilities in its security solutions are particularly exposed. This also applies to the solutions designed to provide the necessary protection for security in remote work.

Threat actors often seek the easiest point of entry. NSM points out that the insider risk is real and that preventive measures must be prioritised. Daily, security-related management is key to reducing the risk of insider activity. Preventive measures must be prioritised to reduce insider activity risks and to safeguard assets.

Complex supply chains mean that weaknesses at a supplier level translate into weaknesses for the businesses to a greater extent than before. This in turn means that supplier security achieved through good qualification routines, follow-up of these routines, and information sharing with suppliers must be more highly prioritised. NSM also highlights the importance of security in procurement processes. It is important to clarify the need for protection related to procurements and to uncover vulnerabilities in the processes. ■

Ingvild Klaveness (Photo: Havtil)

WANT TO KNOW MORE?
Read about Havtil's work on security and find links to the national threat assessments at havtil.no.

Search for Havtil on your preferred podcast platform and listen to the full interview with Ingvild Klaveness (in Norwegian only).

UNDERSTANDING THE NORWEGIAN REGIME

WHAT IS SECURITY?

While safety is about preventing accidents and mishaps associated with your own legal activity, security involves countering undesirable intentional incidents/ deliberate attacks.

Section 9-3 of Norway's Petroleum Act requires licensees to implement and maintain security measures to help frustrate deliberate attacks on facilities, and to have emergency plans in place at all times for responding to such assaults.

Havtil conducts system-oriented and risk-based supervision of security measures. This work also involves close contact with other relevant government agencies, the companies, and employer associations/ unions in the industry.

WHAT IS THE SECURITY ACT?

In addition to supervising security, Havtil has been named the regulatory authority for the petroleum sector pursuant to the Norwegian Security Act.

This statute is designed to protect national security interests. It contributes to preventing, exposing and countering security threats – in other words, intentional acts which could directly or indirectly harm Norway's security interests.

Pipeline transport of natural gas to Europe and control over petroleum production on the Norwegian continental shelf (NCS) have been identified as fundamental national functions (GFNs), and individual operator companies are subject to the Security Act.

WHAT IS SOCIETAL SAFETY?

Societal safety or civil protection concerns society's ability to protect itself against and deal with incidents which threaten its fundamental values and functions, and put life and health in danger.

Such events could have natural causes or be the outcome of technical faults, human error or deliberate acts – including digital attacks.

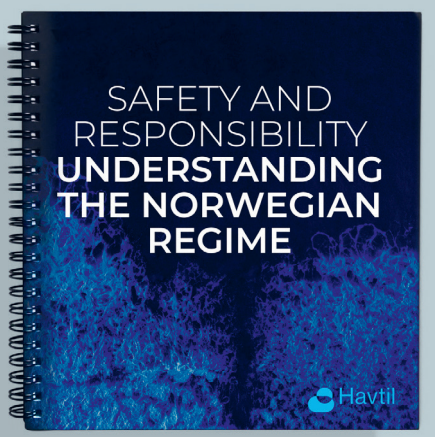
Havtil has been given responsibility for societal safety within its area of authority. This includes contributing to situational awareness and the risk picture.

WHAT IS TOTAL DEFENCE?

Havtil is part of Norway's total defence, a collective term for the country's military dispositions and civil preparedness.

Total defence covers support and collaboration between the armed forces and civil society over prevention, emergency response planning and operational conditions.

Its object is to ensure that society is able, in every type of emergency, to keep a functioning national crisis management in being, deal with a large number of injured people, ensure food, water and energy supplies, and maintain communication and transport systems. ■



MORE QUESTIONS

The text on these pages is taken from "Safety and responsibility: understanding the Norwegian regime", which is our little handbook on the Norwegian safety regime. The book is available both on havtil.no and in printed version.

Order the book by sending an email to dialog@havtil.no and specifying the quantity.

The Goliat oil field is located in the Barents Sea, 85 kilometres northwest of Hammerfest. The picture is taken from the Norwegian Armed Forces' frigate *KNM Fridtjof Nansen*.

RESPONDING TO RISK

A more serious threat landscape impacts the work on safety and security within the petroleum industry. Vår Energi is keen to focus on where the company can play a pivotal part: Preventing and reducing consequences. →

Text: Øyvind Midttun **Photo:** Catharina Molland Dale/The Armed Forces

In the national threat assessments from the Norwegian Police Security Service (PST), the National Security Authority (NSM) and the Norwegian Intelligence Service for 2025, unequivocal reference is made to the threat from Russia of potential sabotage targeting critical infrastructure such as pipelines, cables, facilities and plants.

Vår Energi is the operator of several fields on the Norwegian continental shelf, including Goliat, the first manned field in the Norwegian sector of the Barents Sea. The company's EVP for safety and sustainability, Ellen Waldeland Hoddell (pictured), takes the new threat assessments very seriously.

REAL THREAT

How is conducting activity in the Barents Sea currently?

"The national threat assessments presented in February carried a grave message alluding to an increased likelihood of sabotage actions against our industry. We take this seriously. At the same time, the threat landscape applies to the entire shelf, and is not an isolated problem for the Barents Sea," she points out.

"We have been present in the Barents Sea for over ten years and have had to deal with Russia being our closest neighbour since the start-up of Goliat," she says.

"This means that we have always taken into account and been mindful of this threat, but we have never considered the threat of sabotage to be as real as it is now. Through targeted work on safety and security in the Barents Sea over time, we have established a close and good cooperation with the police and other authorities. We have also established a successful cooperation with relevant stakeholders in Finnmark.

"Barents Sea Operations Cooperation (BASOP), a cooperation body consisting of companies with activities in the Barents Sea and Offshore Norge, is a strong example of such cooperation," she says.

"We probably face some different challenges from elsewhere on the shelf, and we definitely observe certain things that are not seen as frequently further south.

"I believe the presence of our industry in the Barents Sea is both significant and positive for several reasons. Amongst other things, we contribute to an improved and more holistic situational picture for the High North. We report what we see, and we take our social responsibility seriously," Waldeland Hoddell emphasizes.

VIGILANT EMPLOYEES

How are offshore employees affected by the geopolitical security situation and the changes in the threat landscape?

"The feedback I have received is that our employees feel that it is safe, secure and pleasant to travel offshore to work. They feel that there is a positive dialogue and transparency between sea and land - and that information regarding threat levels, security risks and security measures is communicated in a way that contributes to security and certainty that we are implementing good measures to safeguard security.

"We also receive positive feedback from our offshore employees on our regular drills rehearsing the facilities' safety plans and procedures. In addition, we are fortunate to have vigilant employees at sea who are good at reporting back", she says.

"The key when it comes to the national threat assessments is to translate them into what they mean for us and for our activities. In other words, we must operationalize the information we receive from the authorities and communicate it in such a way that it is understood by everyone working for us. This is important to create a common understanding of the risk landscape and to help each individual to be aware of their own role and relevant vulnerabilities.

"At the same time, it is important to focus on what we can do something about. There is little we can do about the threat instigators. What we can do something about, however, is ensuring a good understanding of which values we should protect. Against this backdrop, we must identify, assess and reduce vulnerabilities through targeted measures. As with all other HSE work, it is about working systematically, with continuous improvement over time, to strengthen robustness."

THE IMPACT FACTOR

How does the current geopolitical security situation impact Vår Energi's safety and security operations?

"We are all impacted, both at a company level and at a private individual level. The outbreak of war in 2022 was a turning point. The change in the threat landscape happened quickly - meaning that we had to respond quickly. We were able to do this because we have worked proactively on security for many years and had good plans in place.

"The way we work on security is very transferable to safety. By that I mean that we use many of the same mechanisms and established processes in both areas. We are used to working in a risk-based manner, to managing risk and to ensuring a common situational awareness. Cooperation, participation and interaction are at the very core of what we do."

What are the success factors for working holistically on safety and security?

"An important success factor is to recognize that the two are closely connected. It is not just HSE people who carry out HSE work, or just security people who carry out security work. Everyone who works at and for Vår Energi must work on safety and security

"The national threat assessments presented in February carried a grave message alluding to an increased likelihood of sabotage actions against our industry," says Ellen Waldeland Hoddell, EVP for safety and sustainability at Vår Energi. (Photo: Vår Energi)

- in operations, projects, logistics, recruitment or purchasing. It is about becoming even better at integrating safety and security into the work processes. We cannot afford to rest on our laurels.

"We have a leadership principle at Vår Energi called *solve for totality*, This is about not viewing the challenges in isolation, but about thinking holistically and doing what is best for the company as a whole. We must work in an integrated manner and as one. Sharing information and plans. Working systematically over time. And interacting."

SOME DIFFERENCES

How is the industry working on this, and where can improvements be made?

"I have found that there is very good cooperation within the industry and with the authorities. We share a lot of common ground in the way we work and approach challenges. Collaboration is key and clearly one of the industry's great strengths.

"However, there are still some obvious differences. In particular, the fact that some operators are subject to the Security Act and others are not. It's all a bit new to us – and a challenge we must manoeuvre our way around. We need to figure out how to ensure that sufficient and the correct information is shared at the right time. This must be done in such a way that the industry, along with the authorities, receives a coordinated and rapid response to any incidents."

NEW TIMES

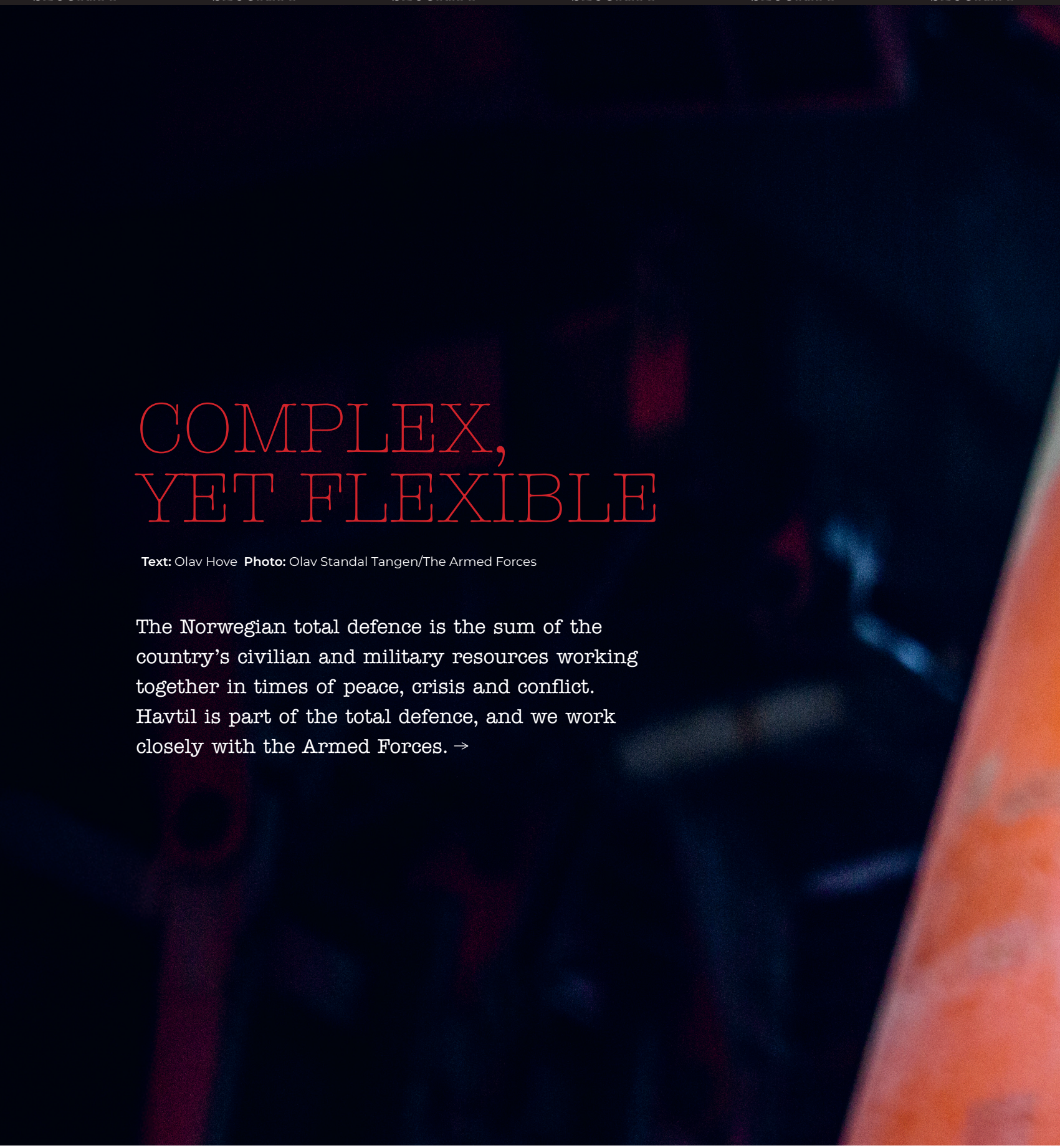
"As far as possible, we must seek common situational awareness, even though not all information can be shared between different stakeholders. It is important to recognise that adequate situational awareness is created by all the stakeholders on the NCS.

"I am certain that we will make this happen, and we are already making great strides in this regard. But there are new mechanisms and challenges which we still need to figure out how to deal with.

"We must not forget that the trust we have in the industry and in society is valuable and must be protected.

"There are those who will deliberately set out to influence, create discord and distrust. That is a real part of the threat landscape," says Waldeland Hoddell.

"We have had the privilege of living in times of peace and contentment for a long period of time, but the current reality has shifted. We must acknowledge the situation in which we find ourselves, whilst managing the long-standing trust which has been earned in the best possible manner. This will continue to serve us well in the future." ■



COMPLEX, YET FLEXIBLE

Text: Olav Hove **Photo:** Olav Standal Tangen/The Armed Forces

The Norwegian total defence is the sum of the country's civilian and military resources working together in times of peace, crisis and conflict. Havtil is part of the total defence, and we work closely with the Armed Forces. →

SECURITY SECURITY SECURITY SECURITY SECURITY SECURITY

The goal of the total defence concept is to protect Norway's territory, independence, national values and the civilian population. The picture shows personnel from the Armed Forces Naval Special Operations Command .

"A war requires us all to stand together and help each other. That is the crux of the matter," says lieutenant colonel Lars Tore Høiem-Storås, head of the section responsible for civilian, military and international cooperation at the Norwegian Joint Headquarters (FOH).

In simplified terms, the role of the total defence can be divided into two parts - one in the event of a crisis and one in the event of war:

In a crisis, such as a storm, in rescue operations or in response to incidents caused by floods or landslides, civilians can ask the Armed Forces for support and assistance. In a war situation, the Armed Forces will ask various key groups within society for assistance.

"On a daily basis, we in the Armed Forces work most closely with government bodies. The fact that we have established this cooperation over time, throughout the pandemic and especially since February 2022, also makes us better equipped to tackle what we can expect in war," says Høiem-Storås.

"We know each other well and have established good relationships with each other, which makes it easy to pick up the phone and call each other if needed."

LINK

According to Høiem-Storås, the FOH is in close dialogue with civilian liaisons from a total of 20 directorates, agencies and professional authorities - including Havtil.

"These liaisons are motivated, professionally skilled and a very important resource for our headquarters. The liaisons are placed among the various disciplines at FOH to safeguard the principle of responsibility and ensure that our plans and operations are based on realistic assumptions."

Anthoni Larsen is Havtil's contact person for FOH. He emphasizes the importance of agreeing on what should happen and where the interfaces lie between the various bodies.

"Our society is specialized, and the sector principles are strong. To make cooperation within the total defence work well, we are dependent on good processes, meeting frequently and being informed about each other's tasks and roles," says Larsen.

In a complex scenario, it is important to know who does what in a war situation. This is why frequent practice drills are held. The relevant parties from various levels meet to carry out drill procedures, discuss and coordinate.

"Our job is to help the Armed Forces do their job as relevant to our sector. This applies not only to incident management, but also to the planning work,"

explains Havtil's contact person for the FOH.

QUALITY ASSURANCE

Høiem-Storås also emphasises the importance of this work.

"The Armed Forces are traditionally skilled at coordinating and creating a common thread between us and various sectors and agencies. But we need to quality assure our processes from a civilian perspective in order to make realistic judgements about our planned activities," the lieutenant colonel points out.

He indicates that collaboration has developed and improved steadily due to the events we have experienced over the past five years, but emphasizes:

"A war will make huge demands on us. It will be intense. We will be working under pressure, in all likelihood with a lack of resources and with deactivated communications systems. This is why we do as much as we can to coordinate and finalise plans in peacetime, so that we are as well prepared as possible for what we may encounter. This also includes finding alternative methods of communicating and operating together in war," says Høiem-Storås

"When war strikes, the most important job is to do what you do in peacetime - namely to maintain the societal critical functions." ■

Havtil is in close contact with the Armed Forces. "Our job is to help the Armed Forces do their job as relevant to our sector," says Anthoni Larsen at Havtil. (Photo: Havtil)

ACTIVELY DISSEMINATING INFORMATION

"In light of the security policy situation, it is necessary to maintain a sufficiently high level of security for reasons of national security. This also applies to activities on the Norwegian continental shelf. The Norwegian Ocean Industry Authority shall, in coordination with other relevant authorities, actively convey relevant information to licensees, which can contribute to updated risk assessments in the industry."

(From the Ministry of Energy's letter of allocation to Havtil for 2025)

PROTECTING THE NATION AND ITS PEOPLE

The Norwegian total defence concept was developed during the period following World War II.

In its recommendation, the Defence Commission of 1946 emphasised the significance of strengthening the Armed Forces through a total defence concept. The defence of Norway was to be based on both a military defence and a broad civilian preparedness.

The objective was, and still is, both to protect Norway's territory, independence and national values, and to protect the civilian population. The total defence concept revolves around mutual support and cooperation between the Norwegian Armed Forces and civilian society on prevention, contingency planning, crisis management and consequence management across the entire crisis spectrum from peace via security policy crisis to armed conflict.

In principle, the term civil-military cooperation encompasses all civil-military cooperation at all levels and spans a broad spectrum involving many different parties. In some cases, the Armed Forces support civilian activities, while in other situations the Armed Forces are supported by civilian resources

(Sources: NOU 2023: 17. The situation is serious. Equipped for an uncertain future and White Paper No. 9 (2024–2025) to the Storting. Prepared for crises and war)

Torleif Husebø is head of process integrity at Havtil and plays a key role in the authority's work on AI.

AI REQUIRES A HOLISTIC PERSPECTIVE

Text: Olav Hove **Photo:** Elisabeth Kjørmo

Havtil monitors the companies' work on artificial intelligence (AI) closely – and ensures that risk factors are seen and managed. →

In the petroleum industry, many projects and initiatives are currently underway to develop and implement artificial intelligence into various systems. Havtil employs extensive resources on obtaining an overview and helping companies to see AI in a holistic perspective, where also risks are highlighted and managed.

"Havtil has followed up on artificial intelligence for the industry over time," says Torleif Husebø, head of process integrity with a key role in Havtil's AI work. The follow-up, which has taken place through frequent meetings with operating companies, shipowners, drilling contractors and system suppliers, is progressing at full speed. Havtil also directly supervises implementation. Husebø points out that it is important to distinguish between different systems and the degree of impact they have on safety. →

“A serious accident or incident is rarely due to the failing of one specific thing.”

DIRECT AND INDIRECT

“We operate within two categories. The first consists of systems that have an indirect impact on safety, often decision support systems. The second category consists of systems which are directly connected to safety, such as emergency shutdown systems or fire/gas systems which feed directly into safety-critical applications,” Husebø explains.

He states that the use of AI within systems in the first category is currently most commonly seen in the industry. At the same time, work is underway on technology which falls into category two.

“We see, for example, that systems are being developed within drilling - to optimize the drilling processes. There is only a small step between this and what we refer to as safety-critical impact,” says Husebø.

TECHNOLOGY NEUTRAL

The regulations for the petroleum industry are so-called technology neutral. They consist mainly of functional requirements, which determine what level of safety must be achieved, but not how this should be done. Separate guidelines for the regulations show how the provisions can be achieved. They often refer to established standards. This means that constant updates to the regulations in the face of new technology should not be necessary.

“Our assessment is that the regulations hold up well when applied to AI, but that there is still work to be done on the standardisation side. We see the same in general when it comes to the introduction of new technology. But good work is being done on AI-relevant standards both nationally and internationally,” Husebø points out.

INTERDISCIPLINARITY

He emphasizes the importance of so-called interdisciplinary competence.

“AI encompasses many disciplines. Therefore, it is very important to think interdisciplinarily. For example, if you are going to implement AI in drilling systems, it is not sufficient just to use AI experts.

“AI implementation places great demands on people, the organization and technology. Therefore, it is important to focus on the connections.

“A serious accident or incident is rarely due to the failing of one specific thing. It is more often than not a combination of several factors,” says Husebø, and highlights certain points that are particularly important in the development,

Do you want to hear the full interview with Torleif Husebø? Search for Havtil on Spotify or on your preferred podcast platform (in Norwegian only).

implementation and use of AI in the petroleum industry:

RISK MANAGEMENT:
Have good initial processes, and make sure to identify and assess relevant threats and hazards. New technology will always involve new circumstances which must be taken into account.

COMPETENCE:
Involve relevant disciplines; a cross-section is needed. Good interdisciplinary competence is essential.

TECHNOLOGY QUALIFICATION:
This is especially important when it comes to AI, which looks likely to be used extensively, with possible deep implementations. Thorough processes are also important to achieve sufficient maturation of the technology.

STANDARDS:
The industry must contribute to the work on standardisation - as we have seen, for example, with Norsok, which has contributed significantly to security levels. On the topic of AI, it is important that we all pull our weight. The goal must be to implement AI-based solutions in order to improve security. ■

"The goal must be to implement AI-based solutions in order to improve security."

PRUDENT USE
Havtil has had a knowledge overview prepared which covers the basic risk factors associated with the development and use of artificial intelligence (AI) in the petroleum industry, particularly with regard to major accident risk.

The report "Prudent use of artificial intelligence in the petroleum sector" explores how AI can improve both efficiency and safety, whilst taking into account the unique risks AI presents compared to traditional IT and automation systems.

The report can be found at havtil.no.

MAIN THEME 2025
ARTIFICIAL INTELLIGENCE IS ALSO A RISK FACTOR
AI is taking over more and more of the technology applied in the energy industry, including in safety-related operations. AI-based solutions are an important resource and can help mitigate risk. But AI can also do the opposite – contribute to increased risk. Industries at risk of major incidents are particularly vulnerable.

The challenge is to see the bigger picture and view AI in a holistic perspective. In the development of AI solutions, the interaction between people, technology and organisation must form the basis for safe use and maintenance. At the same time, we must prevent AI from making us more vulnerable to external threats and malicious actions.

Responsible use of AI is a matter of common interest for the parties in the industry. In the last resort, it is a management responsibility.

”Standards contribute to safety,” says Linn Iren Vestly Bergh, who works on digitalisation and new technologies at Havtil.

COLLECTIVE PUSH FOR AI STANDARDS

Text: Olav Hove **Photo:** Elisabeth Kjørmo

Extensive work is currently underway on the standardisation of artificial intelligence (AI), nationally and internationally. Standards are necessary to be able to deal with the opportunities and challenges associated with the use of AI.

"Standards create predictability, demonstrate that elements work together, and by no means least, standards contribute to safety," says Linn Iren Vestly Bergh, who works specifically on digitalisation and new technologies at Havtil.

In recent years, she has dedicated much of her time to AI - primarily to how the authorities can contribute to promoting the prudent development and use of AI in the industry.

Bergh participates actively in standardization work both nationally and internationally. This involves attending meetings, providing input and assessing draft standards. In addition, she is engaged in sharing knowledge about standardisation internally at Havtil and out to the industry.

"Knowledge of the work on standardisation is important for us as a supervisory authority to be able to follow up AI in the industry in a positive manner. This includes having up-to-date regulations and supervisory methods ensuring that the industry uses AI in a prudent manner."

SORTING JOBS

Bergh admits that it can be difficult to remain silent on the matter of what is what within this work scope. By way of →

example, how does the EU's AI Act relate to standardisation work in practice?

"The AI Act, which the EU is working on, sets the overall framework for how AI should be developed and used. It defines risk levels and requirements for systems that may pose a high risk to society. Standardisation is an important tool in terms of meeting the regulatory requirements," she comments.

The EU regulation thus states what must be achieved, whilst standards can provide technical specifications for how to achieve it. The standards can, for example, describe important principles and procedures for testing AI systems, assessing datasets, or ensuring transparency and human-centric design. Standards can also help to harmonize practices across national borders, which will become important in a globalized industry.

CLEAR CALL

Bergh is Havtil's representative in CEN-CENELEC Joint Technical Committee 21 (JTC 21), a standardization committee which aims to develop harmonised standards for AI technologies.

The work of JTC 21 is divided into several working groups, which target specific areas. These include, for example, AI terminology, risk management, data management, cybersecurity, and human supervision and control. Companies which choose to comply with the harmonised standards will, as a general rule, be able to assume that they comply with the AI Regulation.

"The development of harmonised standards is basically a consensus-based process, which means that all parties must be in agreement before a standard can be adopted. It's a lot of work, but it's also very rewarding to be a part of shaping the standards of the future," says Bergh, who has a clear message for the industry:

"Become involved in this work. AI technology is developing at speed, and we must work together to ensure that we have the necessary standards in place to keep up. Without industry standards, we risk a fragmented approach to AI security.

"This may lead to the development and implementation of AI systems which increase the risk of accidents and incidents.

"It is also important to build trust in AI technology. Clear and unambiguous standards fostering optimal AI solutions will also promote trust," Bergh points out.

"The sooner we put standards in place, the better equipped we will be to handle the challenges and opportunities provided by AI." ■

If you would like to hear the full interview with Linn Iren Vestly Bergh, you can find it at havtil.no or on your preferred podcast platform (in Norwegian only).

STANDARD
A standard can be defined as a "document for common and repeated use, developed by consensus and approved by a recognized body, which provides rules, guidelines, or characteristics for activities or their results, aimed at achieving optimal order in a given context."
(Source: Standards Norway)

HARMONISED STANDARD
A harmonised standard is a standard developed by a recognised European standardisation organisation on behalf of the European Commission.

If the requirements of a harmonised standard are met, it can be assumed that the relevant requirements of EU legislation are fulfilled.

The EU determines whether a standard is harmonised.

EUROPEAN AI STANDARDISATION
CEN-CENELEC Joint Technical Committee 21 (JTC 21) is a joint technical committee for the standardization of artificial intelligence.

The committee was established in 2021 by the European standardisation organisations CEN (Comité Européen de Normalisation) and CENELEC (Comité Européen de Normalisation Électrotechnique).

JTC 21 has a mandate from the European Commission, and the standards are intended to help create a common understanding of and a uniform approach towards AI regulation in Europe.

The work in JTC 21 supports the implementation of the EU AI Regulation by developing harmonised standards.

"Without industry standards, we risk a fragmented approach to AI security," says Linn Iren Vestly Bergh. Here in Havtil's podcast studio with colleague Olav Hove.

ON HUMAN TERMS

Text: Eileen Brundtland **Photo:** Ole Jørgen Bratland/Equinor

Artificial intelligence (AI) is on the cusp of revolutionising the industry. At Equinor, it is crucial to find the right balance between leveraging new technology and ensuring safety.

"We must listen to the end users. They are the ones who will be working with the risk and feeling its impact personally. At the end of the day, they know their job better than anyone," Jan Tore Ludvigsen at Equinor points out. (Illustrative photo)

Jan Tore Ludvigsen, head of organisational safety and human factors at Equinor, summarises the most important significant success factors resulting from the introduction of AI:

"Critical thinking and human control are crucial to success," he says.

He explains that the company's philosophy is to put people front and centre when onboarding new technology.

"We cannot implement new technology and then expect people to adapt to the technology. We must carry out thorough risk assessments and develop tools which support people in their work processes.

"AI will not replace people, but certain tasks will be changed or solved in new ways. I believe that humans become even more important when we implement AI".

STRENGTHS AND WEAKNESSES

Ludvigsen believes that successful AI use is about exploiting the complementary strengths of humans and machines.

"AI systems excel in their ability to process huge amounts of data in a short time and to find patterns that humans cannot detect as efficiently.

"Human expertise, on the other hand, is superior when it comes to →

> “Critical thinking and human control are crucial to success.”

Jan Tore Ludvigsen is head of organisational safety and human factors at Equinor. (Photo: Equinor)

contextual understanding, the ability to put information into context, and to make intuition-based or knowledge-based decisions.

“This is the basis for our human/machine collaboration. We must use AI for what the systems excel at, and humans for what we excel at. Just as we have done with automated systems in the past.”

DOCUMENTED BENEFITS

Equinor’s approach to artificial intelligence is twofold. Office-based AI solutions applying major language models are used by most employees for tasks such as translation work, copywriting, and presentations. At the same time, the company is developing industrial applications aimed at specific applications.

“As per today, we have over 150 AI tools in our register, and we have already reaped significant benefits from the technology,” says Ludvigsen.

Amongst other things, he highlights machine learning for condition monitoring in maintenance optimization, where the company has documented tangible cost savings. The technology is also used extensively in subsurface work, particularly for well planning.

“We also strongly believe in using AI to assist in finding the correct requirements in the management system more easily and more rapidly than previously. However, there are still experts in the field who must assess whether the requirements are correct and whether the interpretations are satisfactory”, he emphasizes.

OVERCONFIDENCE

The EU’s new regulation on artificial intelligence stipulates requirements for human oversight of AI systems, i.e. that humans must monitor and be able to intervene if something goes wrong. Ludvigsen is very positive towards the requirement, but indicates an ethical dilemma:

“It becomes problematic when technology companies claim that their applications can be used in safety-critical settings provided humans are monitoring the situation. The responsibility thus becomes transferred to the end user.

“We are aware that the models have their limitations. They can be unreliable, make errors or provide decision support which is not entirely correct. At the same time, humans also have their limitations. Humans make mistakes. We humans are not good at monitoring, because we get bored easily. We also tend to trust too much in the systems, also known as overconfidence.”

THE IRONY OF AUTOMATION

To illustrate the problem, he takes an example of motorists blindly following their GPS.

"In Eastern Norway, it sometimes happens that people drive onto ski slopes, because the trails serve as roads in the summer. People can drive for several kilometers before they recognise their mistake. Even when they can see that they are on a ski slope, some people continue to drive until the car can advance no further.

This phenomenon is very familiar in safety research under the term "irony of automation". The more you trust and use a system, the less likely you become able to understand the situation and act autonomously.

"My concern is that we will become passive in relation to technology. If you don't question the information you're provided with, you're trusting something to which you should possibly be sceptical. This creates a loss of situational awareness which renders you unable to intervene when something is wrong or goes wrong."

WE MUST PLAY OUR PART

Ludvigsen stresses that an increased application of AI requires interdisciplinary expertise.

"We need to understand humans, technology and how organizations function. We cannot leave development to the technologists alone.

A key part of the work is therefore the inclusion of employees.

"We must listen to the end users. They are the ones who will be working with the risk and feeling its impact personally. At the end of the day, they know their job better than anyone."

STRICT QUALIFICATION

To ensure that the systems at Equinor are reliable, the company carries out thorough processes for the qualification of new technology. This means that certain applications may be rejected.

"One such example is an AI assistant that was to be used in the control room. Testing with actual operators in the simulator showed that the decisions made by the assistant were not sufficiently reliable, and the project was therefore discontinued", says Ludvigsen.

Although the company has well-established guidelines for risk analysis and barrier management, he points out that these are now being further developed to encompass AI.

"International standardisation work is underway in this field, but the landscape remains demanding. There is a definite need for user-friendly guidelines."

AI IS NOT YET MATURE

"We believe that AI can make a positive contribution to safety on the shelf, for example through improved condition monitoring for safety systems and in terms of reducing people's exposure to risk and hazardous work."

At the same time, Ludvigsen believes that AI's efficiency gains currently surpass its safety gains, and that the technology is not yet ripe for implementation in critical control systems.

"I am concerned that the significance of human surveillance is not fully appreciated. We should avoid AI machine learning in our control systems until we can confidently document that the technology is reliable and that it is possible for humans to retain control.

"Whilst AI can help us systematize data, monitor systems and provide a better overview of the security barriers we have in place, I believe that the uncertainty associated with the technology as per today overshadows the potential benefits, particularly in the case of safety-critical work in control rooms." ■

THE DAY THE NATION FELL TO ITS KNEES

Text: Inger Anda **Photo: NTB**

On an icy cold evening in 1980, the unthinkable happened. The living quarters platform, *Alexander L. Kielland*, collapsed and toppled over - far south in the Norwegian sector of the North Sea. 212 people were onboard. 123 never returned home.

The *Kielland* disaster occurred on March 27, in high seas and treacherous fog. Norway became a silent witness to unfathomable scenes. Grief, disbelief, and despair gripped the nation.

Thousands of people were directly and indirectly affected by the tragedy. The accident was and still is a national trauma, a major incident that has affected Norway and the oil industry for 45 years.

20 MINUTES

Kielland was originally built as a drilling rig but was later converted into living quarters, or a flotel. When the accident happened, the platform was under contract to Phillips Petroleum. It had been used at several locations on the Ekofisk field and was at the Edda 2/7 C platform on that fatal day.

At 18:20 on Thursday, March 27, 1980, powerful bangs were heard on the Edda platform. One of K*ielland*'s five legs had been ripped off. The platform instantly became heavily lopsided, before capsizing just 20 minutes later and ultimately floating upside down in the raging sea.

Onboard *Kielland,* many were trapped in common rooms and cabins when the platform capsized. Others were killed by loose flying objects. Lifeboats and rafts were in short supply, and the equipment proved difficult to launch. There was also a shortage of personal rescue equipment. Many of those who were alive when they ended up in the sea drowned or froze to death.

"ALL HOPE IS GONE"

Officially, 80 ships, 19 helicopters, and seven planes from various countries participated in the *Kielland* rescue operation – in addition to several unidentified boats and fishing vessels which happened to be in the area.

The rescue operation following the disaster was extremely difficult. Challenging weather conditions and poor preparedness contributed to the complexities. The mission was ended two days later, when finding survivors was no longer realistic.

"All hope is gone," was the headline on the front page of Dagbladet on Saturday, March 29, 1980.

TURNING POINT

No other accidents in the Norwegian petroleum industry have claimed more human lives than that of *Alexander L. Kielland*.

Following the incident, comprehensive areas of Norway's safety regime were reviewed and reformed. The changes that ensued continue to form the basis for safety work in the petroleum industry – and for the high safety level we have since achieved.

Accountability is key in current safety work. Companies have a clearly defined, overarching responsibility for ensuring safety in their own operations. The expectation of learning from accidents and serious incidents is also a fundamental aspect of today's regime. Continuous improvement is an additional requirement.

PRECAUTIONARY PRINCIPLE

A focal aspect of today's safety work is the duty to prevent accidents and injuries. Prevention starts at the drawing board and in the planning phase when a facility is being designed and built.

Understanding risk, as well as insight into barrier principles, are both essential to preventing accidents and injuries. Expertise in the interplay between →

people, technology, and organization is crucial.

PREPAREDNESS

The *Kielland* disaster tragically illustrates what can happen if preparedness is lacking. Today, stringent requirements govern contingency plans for all companies responsible for the operation of platforms, rigs, and onshore facilities in the petroleum industry.

In the event of an incident, good preparedness will help to minimise the consequences. Contingency solutions must ensure that people can be quickly and efficiently rescued from dangerous situations – using lifeboats, emergency vessels, helicopters, and ships available in a given area. Rescue operations must be carried out in close collaboration with the onshore rescue and health services.

LIFESAVING EQUIPMENT

In the aftermath of the *Kielland* disaster, several research projects were initiated, including those related to the improvement of lifeboat standards. Today's lifeboats are fundamentally different from those used in 1980.

On *Kielland,* only a few of the 212 individuals onboard had access to survival suits. Today, the situation is totally different. Everyone onboard must have clear access to survival suits and other safety equipment.

Over the years, high-tech and specially adapted survival suits have been developed, which can store heat, inter alia. Special suits for use in Arctic conditions have also been developed.

REGULATORY CONSEQUENCES

The *Alexander L. Kielland* incident revealed numerous weaknesses and areas for improvement in the regulatory and supervisory arrangements on the shelf. In the years following the accident, a completely new safety regime was established.

The expectation that the industry actively contributes to regulatory development and standardization is a crucial element of the Norwegian petroleum regime. Regulatory development therefore takes place in close cooperation with the industry stakeholders.

The Regulatory Forum is a central arena in this body of work.

PETROLEUM ACT

The *Kielland* accident had a significant impact on the organization of the regulatory regime in the petroleum industry. Five years on from the incident, in 1985, the Petroleum Act came into effect.

The Act introduced clear responsibilities between the various authorities as well as between the authorities and the industry.

Since 1985, development has slowly but surely moved away from detailed regulation towards so-called function-based regulatory requirements. The industry primarily develops the industry standards to which the function-based regulatory requirements refer.

THREE PHASES

The development of the regulations from 1985 to today can be divided into three main phases:

1985-1995: CLEAN-UP

Regulatory work in the period from 1985 to 1995 largely involved tidying up and streamlining what had gradually become an extensive and fragmented regulatory framework. For example, regulations were simplified by dividing them by topic. In 1992, 13 new regulations were established, and in 1995, the Regulation on Systematic Follow-up of the Working Environment in the Petroleum Industry was introduced. This ensured that employees on floating installations were also covered by the Working Environment Act.

1995-2001: COHESIVE SET OF REGULATIONS

In the work to further simplify the regulations, the authorities pledged to present a unified approach to the industry through consistent, coordinated and cohesive measures.

Several industry standards detailed the functional requirements. The new Norsok standards were developed under the direction of the industry. These were based on the industry's collective experience from operations on the Norwegian shelf.

2001-2011: SEA AND LAND

The most recent major regulatory reform in Norway came into force in 2011, with the introduction of cohesive regulations for offshore and onshore petroleum activities.

Although the structure and basic principles remain in place, the regulations for health, safety and environment are constantly evolving. These are updated annually to ensure that they are continuously adapted to reflect the challenges faced by the industry. ■

Dagbladet
Løssalgspris 2,75 Nr. 76 - 112. årg. Lørdag 29. mars 1980

139 døde – største ulykke i vår tid

Alt håp er ute

Flere av de overlevende ble først brakt inn i en hangar ved flyplassen i Stavanger. Utmattede og sjokkerte over den ufattelige tragedien viste de ingen tegn til glede over at de selv hadde overlevd.

■ ■ ■ — Alt håp er ute. Vi har sopt havet rent.

■ ■ ■ Dette var den nedslående, men klare konklusjonen på det stabsmøtet som ble avsluttet på hovedredningssentralen på Sola litt før kl. 21.00 i går kveld.

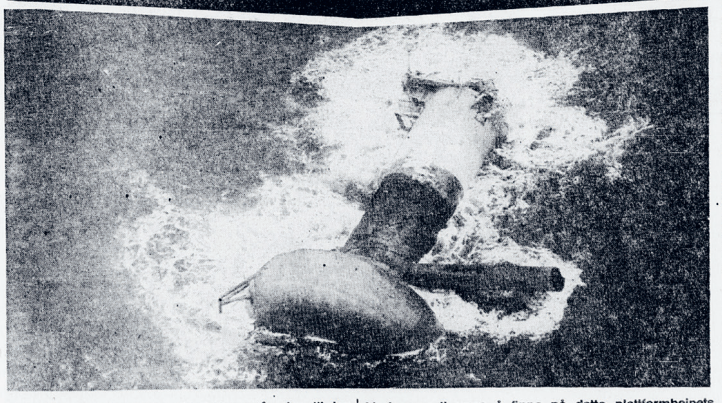
■ ■ ■ Samtidig avviklet sjukehusene i Rogaland katastrofeberedskapen i forbindelse med Nordsjø-ulykken.

■ ■ ■ Dermed synes det også klart at 139 mennesker mistet livet da boligplattformen «Alexander Kielland» gikk rundt, og at dette er den største ulykke i Norge i vårt århundre.

■ ■ ■ Ulykken er også den største som noen gang har forekommet med oljeplattformer.

Sidene 2, 3, 6, 7, 8, 9, 10 og siste

HER ER ÅRSAKEN:



■ ■ ■ Hvordan kunne det skje? Hva er årsaken til den største ulykke som har rammet Norge i dette århundre?

■ ■ ■ Svaret er trolig å finne på dette over 40 meter høye plattformbeinet som ble revet av «Alexander Kielland» og som dermed utløste katastrofen. Mye av forklaringen vil være å finne på dette plattformbeinets bruddflater.

■ ■ ■ Sprekkdannelse og materialtretthet ble i går kveld betraktet som de mest sannsynlige årsaker til katastrofen.

"All hope is gone." Facsimile of Dagbladet, Saturday 29 March 1980. (Source: NTB)

Three primary objectives

Havtil has three clear primary objectives for its work in 2025. These are to prevent major incidents, ensure systematic HSE work and strengthen security measures within the petroleum industry.

Havtil's areas of responsibility encompass the working environment, safety, and emergency preparedness within the petroleum industry, offshore renewable energy production, CO_2 transport and storage, and seabed minerals – as well as security within the petroleum industry.

The annual letter of allocation from the Ministry of Energy governs Havtil's activities and the areas to be given highest priority.

In 2025, Havtil will contribute towards achieving three primary objectives

- Reducing the risk of major incidents within the petroleum industry.
- Ensuring that the companies work systematically and preventively within the areas of health, working environment and safety, and have proper working conditions.
- Ensuring that the companies have the necessary security measures in place to help prevent unintentional incidents and ensure preparedness which is customised to the relevant threat landscape at any given time.

Havtil Norwegian Ocean Industry Authority

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Havtil: Norwegian Ocean Industry Authority
HSE: Health, safety and the environment
NCS: Norwegian continental shelf

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