

Ekofisk: At the crossroads

Also inside:

- Safety first at Teekay
- Beyond compliance with Alyeska
- Quality assurance at Tsing Tao
- DNV Research celebrates 50 years of innovation



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the environment. DNV comprises
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What does it mean to ‘Manage Risk’?

M“Managing risk” is a statement widely used to represent the core of all DNV services. But what does it actually mean?

The new risk reality

In a global and transparent business environment characterised by an increased focus on safety, environmental issues and social responsibility, our clients are facing a new risk reality. Industries have been shaken by accidents and events which have demonstrated their vulnerability. Widely publicised events, such as the collapse of Enron and Arthur Andersen and the severe environmental pollution caused by the losses of tankers such as *Erika* and *Prestige*, have forced companies to take a fresh look at managing risk.

Yet despite real progress, change does not happen overnight. Recently, the accidental puncturing of a gas pipe caused a major explosion on an industrial estate in Belgium, causing fatalities and numerous casualties. Events like these have a major impact on those directly involved or affected, but at the same time, we also see a strong increase in concern from other stakeholders. In fact, doing business today is under constant scrutiny of legislators, politicians, the media, dedicated watchdogs and society at large.

No activity without risk

Risk is an inherent part of any activity. And while risk can never be eliminated, it can be controlled as part of the management of any activity. Improving safety does not occur by chance, but is the

result of planned actions and qualified decisions throughout the lifecycle of any activity. Too often, wrong decisions are the result of wishful thinking rather than factual knowledge and accurate assessments including the worst-case scenarios.

Energy sector

The oil, gas and process industry has always faced unique risk management challenges. Perhaps more than any other industry, identifying risks for oil and gas companies is far easier than implementing the solutions. Consider that while energy resources are becoming more difficult to access, society is becoming less tolerant of risk. The terms “NIMBY” (Not In My Back Yard) or the more extreme version “BANANA” (Build Absolutely Nothing Anywhere Near Anything) are well known in the US. These trends not only call for companies to continue to strengthen and focus their efforts to manage risks, but build credibility.

As an independent organisation with a global presence, DNV is in a good position to help our clients face this new and complex risk environment in a fast-changing world. The combination of our extensive technological know-how and our risk-based principles and solutions, enables our global network of clients to develop sound risk management strategies and appropriate measures to mitigate risk and improve the quality, safety and environmental performance of their operations.



Elisabeth Harstad, chief operating officer of DNV Technology Services

“Too often, wrong decisions are the result of wishful thinking...”

Elisabeth Harstad

Ekofisk:

Overcoming a mid-life

When ConocoPhillips began offshore drilling operations on the Ekofisk field in the North Sea in the early 1970s, analysts estimated a 25 year lifetime horizon for the field. Now that new estimates have added another 30 years, to the life of the field ConocoPhillips is exploring ways to upgrade its aging platforms without losing production capacity.

T

The American oil company and Ekofisk-operator, ConocoPhillips, along with its licence partners, are investing NOK 8.1 billion in the Ekofisk Area Growth Project. The objective is to increase the rate of oil recovery in a profitable and safe manner. The challenge is how to combine old and new installations, parallel to the running production. A total of 6,000 man-years, mostly employed by subcontractors, will be invested in the project until 2005, when the Growth Project is completed.



As head of the Ekofisk Area Growth Project, Bård Atle Hovd strongly believes the best way to increase efficiency is to reduce unintended incidents.

One key part of the project will be the construction of a new wellhead platform, which will be connected to the existing Ekofisk Complex. According to Bård Atle Hovd, who is the head of the Ekofisk Area Growth Project and a former platform manager at Ekofisk, ConocoPhillips brings decades of offshore experience to this effort. He notes that oil has been produced from fixed installations on Ekofisk since 1974, and reconstruction and modification processes are continuously on-going on the field.

Preparing for the future

As ConocoPhillips started production from the Ekofisk II facilities in 1998, it became obvious that because there were limited slots on current installations to drill new wells and the processing and water separation facilities need to be increased, its production capacity would not be able to satisfy the estimated future production plans. The Ekofisk Area Growth project has been conceived to manage these complex issues.



Hovd says the project has been challenging. "Upgrading offshore modifications is like demolishing an old house; when you remove something, you always find something hidden," he says. "In addition, both the weather conditions and maintaining the rapid pace of the project have been a great challenge."

Yet Hovd remains confident the project will be completed successfully. "Project management is about good planning, preparation, and having sufficient information to make the right decisions. If circumstances require that we must revise these decisions, we must evaluate the consequences before we act."

crisis



ConocoPhillips' Ekofisk field in the North Sea is the first legitimate child of the Norwegian oil age. It might also end up being the oldest one.

Photos: ConocoPhillips

Getting to zero

ConocoPhillips has set very ambitious goals for safety, health and environment, identified by the by the phrase "Getting to zero". The company encourages teamwork and building the right attitudes as the key in this effort. The emphasis on zero tolerance stands like a rock in the company's management philosophy.

Hovd says that a great deal of the project's success is related to the subcontractors' performance. ConocoPhillips has been very satisfied with the quality of the work delivered by its business partners so far.

The success of the project is also linked to the company's efforts to integrate the subcontractors in the common safety, health, and environment (SHE) policy. Says Hovd: "We concentrate a lot on safety and see no contradictions between safety and effectiveness. Rather these issues depend on each other. Thanks to their valuable expertise in complex offshore operations, 70 per cent of the subcontractors are Norwegian."

He continues: "Most of my time is occupied by following up the 'Getting to zero' philosophy. We strongly believe the best way to increase efficiency is to reduce unintended incidents." →



Photo: Kjetil Alsвик

“Upgrading offshore modifications is like demolishing an old house; when you remove something, you always find something hidden.”

Quality beyond price

The company is cost-effective and price-conscious, but there are also other factors to be considered when making a NOK 8.1 billion investment. “We must not only focus on man-hour rates and quota prices but on what we get back in terms of quality of facilities, resources and expertise used to execute the project,” says Hovd.

When ConocoPhillips and its license partners decided to put another NOK 8.1 billion into Ekofisk, it was based upon a strong belief in the field’s future profitability. It was also based upon the fact that the North Sea is one of the safest and most predictable areas for major investments worldwide.

ConocoPhillips North Sea Operations accounts for about 17 per cent of the ConocoPhillips Group’s total oil and gas production, and is ConocoPhillips’ biggest business unit outside the US. The Ekofisk Area Growth project was not seen as an extremely profitable project at corporate level. But once again, background experience has shown that the Ekofisk field always delivers beyond expectations.

Ellen Kongsnes

- Ekofisk Area Growth project is estimated to cost NOK 8.1 billion and will enable ConocoPhillips to run the Ekofisk field more profitably for another 30 years.
- NOK 4.5 billion has been allocated to the rehabilitation of the existing installations and the building of a new processing platform. The costs of drilling 25 new wells, necessary to make the field more profitable for decades to come, are estimated to be NOK 3.6 billion.
- The Ekofisk field is located in the southern part of the North Sea, southwest of Stavanger and almost 200 miles offshore Norway.
- The field was discovered in 1969, and production began with the modified jack-up rig “Gulftide” in 1971, and from fixed installations in 1974.
- The Ekofisk Complex consists of 11 platforms, united by bridges. Greater Ekofisk Area consists of about 30 installations.
- In 1994, the Ekofisk licence was extended to 2028 and the work of building Ekofisk II started. A new drilling and wellhead platform came in production in 1996 and a new processing platform was installed in 1997 and put in production in 1998.
- In 1999 the work was initiated to identify future opportunities. The Ekofisk Area Growth project will be completed in 2005.

Cold gas is getting hot



Worldwide energy demands are growing rapidly, and liquefied natural gas (LNG) is fast becoming a hot commodity. Rising prices and lower costs are creating a boom, but the rapid conversion of existing technology to fit this complicated product is neither straightforward nor risk free. Competency and practical experience from a range of engineering fields is necessary to make the transition safe. →

An artist's rendition of an LNG terminal; In connection with the offshore installations set to be built, manufacturers are looking at a number of concepts, floating and fixed, both in steel and concrete.



Natural gas was long considered an unwanted by-product of oil exploration, symbolised by the flares that once illuminated oil platforms and terminals. Now the energy industry has a different view. Encouraged by lower production and transportation costs, demand for environmentally friendly power, to say nothing of regulations prohibiting burn-off, natural gas is in demand.

LNG

Much of the world's resources of natural gas are typically located far from the major energy markets, such as the United States of America, Japan and Europe. In order to transport the gas effectively, it's cooled to approximately minus 160° Celsius until it takes the form of a liquid, reducing the gas' volume by about 600 times in the process. This liquefied natural gas (LNG) is then shipped to the customers. Before it can be used, however, it must be offloaded from the ships and returned to gas form for pipeline transmission at a receiving terminal, also called a re-gasification terminal.

Offshore and out of sight

To cope with increased demand for imported LNG, around 40 new terminals or expansions to existing LNG receiving terminals are planned in North America alone. Many of these new terminals will be located offshore.

"There are many reasons for having the installations offshore, not least the public concern for safety and the dislike of large industrial structures in their vicinity," says Pål Jahre Nilsen, global gas manager for DNV Technology Services. "Another reason is the lack of favourable sites and the difficult and time-consuming approval process to get a facility up and running. The process of approval is typically easier for offshore installations. But while the approval is easier, other things become more difficult when taking this technology offshore."

New and existing technology

Taking a land based technology offshore presents a whole new set of issues that must be addressed before a safe and regulatory compliant installation can be built and operated. A major challenge is combining existing and novel technology safely.

"When moving land based storage solutions and gas processing plants offshore, the design must take into account the marine environment and be



made more compact due to the restricted space," says Conn Fagan, senior principal engineer in DNV Technology Services. "Operating in an exposed offshore environment creates relative movement between gas carriers and the offshore terminal, whether these are fixed or floating, and that puts a strain on the existing transfer technology. In some cases new technology may need to be qualified. At the same time, technology used in maritime transport of LNG is being adapted to offshore terminal design. This includes both floating hull design and design of the LNG containment systems. It is crucial to identify and address the gap between these existing technologies and the novel application of them to offshore terminals."

Not straightforward

DNV has a great deal of experience within all the relevant areas of these existing technologies, from use of concrete offshore to design of LNG containment systems.

"The new LNG production process combines technology and competency from three areas; traditional land based LNG terminals, maritime transport of LNG, and offshore oil/gas structures. This is not easy to do. There are key interface issues that must be resolved, and the industry must take into account all the novel operational challenges," says Nilsen.

Staying ahead

As part of efforts to remain in the forefront of new technology and new applications, DNV engages in both internal and external research into these areas. Current work includes evaluation of sloshing in



Conn Fagan, senior principal engineer in DNV Technology Services (left), and Pål Jahre Nilsen, global gas manager for DNV Technology Services, offer a comprehensive package of services to the LNG industry.

containment tanks, venting and relief from LNG storage, lifecycle assessment of containment systems, and qualification of novel LNG transfer systems.

“Our engagement with all the major offshore concrete structures in the North Sea, our experience with the development of the various containment system designs in use today, together with our access to in-house competence in key areas such as risk assessment and technology qualification, give us an advantage when approaching offshore gas terminals. We are also in contact with regulatory authorities and closely follow their work in developing a regulatory framework for these new concepts,” says Fagan.

Offshore Technical Guidance from DNV

In May 2004 DNV issued the Offshore Technical Guidance “Verification, Certification and Classification of Gas Export and Receiving Terminals.” It describes various approaches to the Verification of gas development projects, including the services of Classification, Certification and Qualification of Novel Technology.

“By combining DNV’s breadth of competency and experience with existing technology, our research and knowledge on new technology qualification, DNV is in a unique position to assist clients in identifying the novel challenges and reaching their economic and safety goals,” says Nilsen.

Anders Øvreberg

THE LNG BOOM IN NUMBERS

The continental United States imported approximately 4.8 MTA of LNG in 2002, accounting for 4 percent of world LNG trade. In 2003 the import had increased to 10 MTA, about two percent of U.S. natural gas consumption. U.S. LNG imports are projected to increase to more than 46 MTA in 2010.

Global LNG liquefaction capacity is expected to increase from 139 MTA per year in 2003 to 197 MTA per year in 2007, based on facilities currently under construction.

THE LNG BOOM INTERNATIONALLY

In addition to expansions by current LNG exporters, three countries – Egypt, Norway, and Russia – are poised to become LNG exporting countries, as they are currently constructing their first LNG liquefaction plants.

At least seven additional countries – Angola, Bolivia, Equatorial Guinea, Iran, Peru, Venezuela, and Yemen – are in the planning stages for their first LNG liquefaction plants.

In addition to expansions by existing importers, three countries – China, India, and the United Kingdom – are poised to become LNG importing countries, as they are currently constructing new regasification terminals.

Bahamas, Jamaica, Indonesia, Mexico, the Netherlands, Italy, New Zealand, Singapore and the Philippines – are in the planning stages for their first regasification terminals.

DNV Research celebrates 50 years

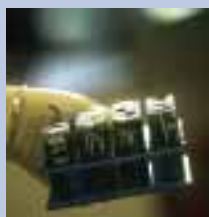
Fifty years ago, DNV took a significant and pioneering step by establishing a dedicated Research Department. Today, DNV is internationally recognised for its expertise in a broad range of industries.



In 1951, professor and vice principal of the Norwegian Technical University Georg Vedeler was appointed managing director in DNV. His vision was to build safer ships in a more profitable way. To do so, he introduced a scientific approach to ship construction.

“In the post war period, an era characterised by a rapid increase in sea trade and the growing size and complexity of ships, the industry recognised that the traditional, empirically based Class rules must yield to more scientific methods founded on state-of-the-art research. For Vedeler, managing these changes effectively required a fresh approach. “We have no choice,” he said. “We have to do research.”

In 1952, Vedeler hired his former student Egil Abrahamsen, who after a short time established DNV Research. “At the time, ship classification in DNV was entirely based on Lloyds rules; and the 1939 rules hadn’t been changed since 1919,” Abrahamsen recalls. For him the challenge, and the key to the future success of the project, was to develop new rules based on scientific and technological knowledge. “The improvement of technology and understanding of engineering was limited at that time in all classification societies,” he says. “That gave us tremendous opportunities when we started with the development of rules based on scientific terms.”



LNG technology

Over time, the DNV’s Research department grew to 300 dedicated employees. Indeed, many of today’s products in DNV’s portfolio have their background from the Research department, such as LNG technology. “We assigned a research team to work with a shipowner, who was very interested in transport of liquefied natural gas (LNG). We were asked to determine the feasibility of transporting LNG onboard a vessel at minus 161° C,” says Abrahamsen.

Various types of tanks were developed and tested. At the same time, a vessel was built with a spherical tank at a Norwegian yard. It was delivered in 1960-61. “We did a tremendous amount of work on that tank. The ship was successful and operated for many years. That was the first set of spherical tanks, a concept later used for LNG which is a technology based on our research,” says Abrahamsen.

The material department had extensive knowledge of materials technology. With the help of the computational programme SESAM (another successful product of DNV Research) the research team was able to design a solution for the integration of the tank and the hull.

O of innovation

“The US Coast Guard insisted that a second barrier should be placed around LNG tanks. I personally went over to them and presented our design based on risk analysis. Eventually, we convinced them to adapt to our thinking,” he says. Abrahamsen notes that this project was the first risk based analyses ever completed in the shipping industry.

Another result of DNV’s research activity is DNV Petroleum Services. DNV’s first fuel testing programme started in 1980 on the basis of findings from a research project completed in the late 1970s. Today, DNV Petroleum Services offers 24 hour time zone fuel testing through its international network of laboratories and regional offices. It is a recognised name in marine fuel management with a global market share in excess of 75 percent in contracted Fuel Quality Testing.

The quest for diversification

Supported by DNV’s competence and expertise in ship technology, the company began to diversify in the 1970s, both geographically and in its technological disciplines. The first step was to build on its existing technical platform and launch services to help clients in the booming North Sea oil and gas industry. This was a high-risk business in which safeguarding life, property and the environment was – and remains – a priority issue. In turn, the focus of

DNV’s Research shifted to the offshore arena, exploiting its synergies with the maritime industry.

In the 1990s, DNV continued to expand its services into new markets, with DNV Research taking a strategic role in building the necessary competence and basis for the new services. “We believe our research activities will help the new services become core business areas in the future,” says Carl Arne Carlsen. Since November 2003, he has been head of DNV Research. He is now focusing on five main programmes.

Shaping tomorrow’s DNV

DNV Research’s transportation programme considers the total value chain of transporting goods on land and sea. DNV personnel consider both the business concept and the technical challenges and a prime focus is on how to make shipping more effective and attractive in the transportation chain. To succeed, innovative ship design and construction methods must be developed, helping build ships that are faster, more reliable, safer and environmentally friendly.

“We are actively working towards such development,” he says, “but as a risk-based solution not prescriptive classification rules,” he says. →



After building up DNV’s research department, Egil Abrahamsen became managing director of DNV in 1966. Here he is seen accompanying President Francois Mitterand and H.M. King Olav of Norway visiting DNV in 1984.



"DNV Research's role is to build strategic competence for DNV as a whole, and to carry out radical research and innovation in new areas. This is research with a high-risk of failure, but also the potential for substantial reward," says Carl Arne Carlsen, head of DNV Research.

Driven by the risk of scarcity of hydrocarbon-based energy, and the growing demand for a cleaner environment and for sustainable societies, DNV is now looking for new types of energy sources and carriers. DNV Research is working to prepare the company for helping clients meet this challenge onshore, offshore and at sea. Developments include natural-gas exploitation, reduction of greenhouse gases by CO₂ capture and storage, infrastructure solutions based on natural gas- and hydrogen, and fuel cells to generate electricity, as well as renewable energy sources.

New lightweight and multi-functional materials, and surface protections based on nano-technology, are to be studied in a new research programme. Materials technology has always been a core competence area for DNV, and the company is committed to ensuring strategic competence for future developments.

Technology is playing a larger role in the development of new product markets for the food and health industries. The risks associated with these are only now being understood and handled. DNV may play an important role in coping with risk in selected biological and life sciences, such as the food sector, disease control, high-risk bio-laboratories, and biological aspects of the environment. "We have begun to build strategic competence in these areas, and to support the development of relevant services," Carlsen says.

Technology in context

In Carlsen's view, technological risk management must increasingly be seen in a broader organisational, human and social context. Successful business is dependent on risk management according to the context of operations. "Globalisation, demand for sustainability and focus on security are issues that make demands on our understanding of both technological development and human behaviour," he says.

According to Carl Arne Carlsen all these areas are recognised as genuine aspects of concerns for future DNV research projects.

Eva Halvorsen





DNV has conducted laboratory tests to chart the sloshing forces involved in partly filled membrane tanks. Seen here, from left, laboratory technicians Morten Andersen, Knut Hansen and Sigbjørn Reinås at work in the test hall at DNV's headquarters in Oslo, Norway

DNV laboratories

The DNV laboratories are a valuable tool used by DNV in two vital ways: verifying theoretical models in full-scale tests and to aid in failure investigations.

– experimenting
with success

DNV has a broad range of laboratories. These facilities have given DNV hands on experience of components and failure modes which have proven to be of great value to DNV's customers and to DNV's efforts to classifying ships and offshore units, create standards, and recommend effective practices and classification rules. "These resources add value to our range of other services and have provided a unique knowledge basis for a lot of the other work we do," states Elisabeth Tørstad, the head of the DNV deepwater technology and technology qualification. →



Borealis-guru Olaf Andersen:
 "The DNV-laboratories have expertise and equipment, and we use them wherever this is practically possible and sensible."



"The laboratory resources add value to DNV's range of services," says Elisabeth Tørstad, the head of DNV deepwater technology and technology qualification.



"The main goal for a failure investigation is to prevent new failures, increase safety and optimise operations," says head of section Trude Helgesen.

Research into LNG tanks

A particular successful example of how the laboratories are used is the recent slosh testing and analyses of LNG membrane tanks carried out for Exxon Mobile. Sloshing in LNG tanks has gained increasing attention lately. This is mainly caused by developments in the LNG market, changes in the design and operation of LNG ships and an increasing interest in floating gas field exploitation.

To study sloshing loads in partially filled LNG tanks, irregular sloshing experiments have been conducted for head and beam seas for different filling levels and sea severities. A 1/20 scale model of a tank from a 138,000 m³ membrane type LNG ship was used for the tests. Measurements have been conducted using pressure transducers and pressure transducers mounted in clusters.

Step-by-step procedure

The issue of sloshing in partially filled tanks is relevant for spot trading and the offshore loading/offloading of LNG ships as well as for FPSOs with LNG capacity. DNV has developed a step-by-step experimental procedure to determine sloshing loads for structural analysis of the insulation system and tank support structure. Of key importance for a reliable evaluation is the step-by-step approach, putting emphasis on an accurate treatment of every step. This means careful modelling of operational and environmental conditions, accurate ship motion calculations, a well-defined procedure for identifying design sea states, a proper experimental set-up and an accurate treatment of the statistics involved in every step in order to determine reliable and realistic design sloshing pressures.

Valuable laboratory testing

"Much of our work is mainly based on the calibration of design formulations performed through testing," says Tørstad. "Several 'cutting edge' projects and services are based on the combination of testing/practical knowledge and theoretical expertise." She mentions several examples where laboratory testing has been valuable, including the development of methodology for fatigue analyses of FPSOs. "Without this project, sufficient fatigue life of the Kizomba A and B could not have been documented," she says.

The sand management services – a recent successful cooperation between DNV Software and DNV Consulting – is based on work completed in the process laboratories. The Garn West project for Shell is another project where actual confirmation of design input through testing has been essential.

Failure investigation to find the answer

Through advanced laboratory testing and failure investigation, DNV also obtains valuable knowledge about failure modes and mechanisms with regard to how things fail and why. Over the years, DNV's laboratory has obtained worldwide recognition for its failure investigations, covering a broad range of issues, from major breakdowns to minor damage to individual components.

"The main goal for a failure investigation is to prevent new failures, increase safety and optimise operations," says Trude Helgesen, head of section.

Failure investigation is not a clearly defined term, but it typically includes the collection of data and information, visual examinations, photo documentation and material verification. DNV has acquired extensive experience and knowledge through working with a wide range of clients and services. This has also given the company broad knowledge of the industry and the regulators. A combination of DNV's risk management expertise with technical knowledge has made this a highly valued service.

"Due to the failure aspect, a major part of this service is contract work and very often of a confidential nature," says Helgesen.

Borealis – a close relationship

Olaf Andersen, chief engineer in material technology responsible for all of Borealis's mechanical equipment, has had a long, close relationship with DNV as a user of DNV services. With a degree in physical metallurgy from the Norwegian Institute of Technology (now the University of Science and Technology) in 1970 and two years spent as a scientific and research assistant to Almar Ness, he came to Stavanger Staal in 1972. There he learned about metallurgy the hard way as quality control manager – and also helped create some alloy developments himself.



Practically every field of technical activity is represented among the failure investigation clients. However, most of the activities are related to oil companies, suppliers to the oil industry, process and mechanical industry, yards and ship owners.

“Five years here was an extremely good school,” he says. So when petrochemicals came to Norway, he jumped on this bandwagon and started to work for Statoil in 1977. When Borealis was established in 1994, he had been chief engineer responsible for material technology at Statoil headquarters since 1991. In 1998, he started to work for Borealis, where he now spends half his time on group issues and the other half troubleshooting at Borealis’ facilities worldwide.

Expertise and equipment

“We’ve used DNV to develop our risk-based inspection system – and we use DNV to inspect damage. The DNV laboratories have a reasonable amount of staff and are flexible and able to agree to and deliver an inspection reasonably quickly. They have expertise and equipment and we use them wherever this is practically possible and sensible.”

DNV has supplied NDT services to the facilities at Bamle in Norway for the past 30 years. Borealis has now also entered into a framework agreement with DNV regarding certification throughout Borealis. Andersen also points out vibration studies of structures and pipelines carried out by Borealis and DNV in collaboration, supported by funds from the Research Council of Norway. Several surveys have also been conducted relating to corrosion in steam

systems, and dynamic steam boiler simulations have been carried out at one of the plants.

Borealis currently has 5,000 employees. Statoil owns 50 percent of its shares, while ÖMV in Austria and IPIC – a fully owned subsidiary of Adnoc, Abu Dhabi’s national oil company - own 25 percent each. Borealis is a major manufacturer of pipe materials, high-voltage insulation, engineering applications and plastics for cars and household articles. The company has facilities in Norway, Sweden, Finland, Germany, Austria, Italy, Abu Dhabi, China and the USA.

Harald Bråthen

THE DNV LABORATORIES

- Structural laboratories in Oslo, Norway and Singapore.
- Metallurgical/failure investigation laboratories in Oslo and Bergen, Norway, and in Singapore.
- Workshop/test facilities in Kuala Lumpur, Malaysia, and in Oslo.
- A corrosion laboratory in Bergen.
- A laboratory for certifying electrical equipment – to a large degree used for maritime equipment – in Oslo.
- A process laboratory in Oslo.
- Fuel testing laboratories: in Singapore, Fujairah, United Arab Emirates, New Jersey, USA, Algeciras, Spain, Rotterdam, the Netherlands, and Oslo.

K POWER is a joint industry project between BP and the Korean company SK Corporation for the construction of a US\$ 614 million LNG fired power plant in the Gwangyang area on the south coast of Korea. The turn-key contractor delivering the power plant for the K-Power enterprise is another Korean giant company – Daelim.

BP GLOBAL POWER signals part of BP's efforts to move from being an oil & gas company to becoming an integrated energy company. BP Global Power is in the fastest growing business segment (Gas, Power & Renewables) for BP with a projected rapid international growth. BP Global Power is a minority shareholder in K Power with 35 per cent

Step into the Safety Arena

It is always difficult to achieve a consistent and high safety standard during any major project. But when the project involves owners and stakeholders with different corporate and national cultures, success can be elusive. Although faced with these challenges, the construction effort of K Power's LNG plant in Korea is proceeding smoothly, and stands as a good model for others to follow.

Using simple, practical and down-to-earth safety communication, K Power has recorded an outstanding health and safety record: Zero accidents with 720,000 man hours so far.

"Entry and exit to the site is always through this safety area, which is providing constant re-enforcement of safety issues,"

Ensuring buy-in

BP Global Power's HSSE manager Dennis O'Leary explains: "From the outset of the K-Power development, the approach has been one of inclusion, of respecting the diversity and contribution of each of the partners. In BP, safety is seen as critical to business success and in this case we are delighted to see a best practice safety concept originating with Daelim. It helps us in BP to realize that just because we set out to be a leader in HSSE, we don't always have the best ideas!

"The whole process is consistent with BP's behavioural approach; visibly and demonstrably helping people to understand what could go wrong. It provides a clear and powerful demonstration of our management's commitment to HSSE. It is an approach that could easily be replicated at other BP sites or any other joint venture projects where a common framework is necessary to accommodate a diversity of cultures," says O'Leary.

Critical to their approach has been the creation of an innovative Safety Experience Training Centre; a dedicated area designed for safety induction which doubles up as the site entry point. Walking through the centre at the start of their shift, all project employees are escorted by a site safety supervisor and shown visual displays on good and poor practice.

One way to safety

At the centre, each new individual is initially inducted into the safety standards required on site such as personal protective equipment requirements, site safety rules for a broad range of conditions, equipment and tasks, including working at height use of scaffolding, lifting, electrical connections and welding practices.

"The emphasis is on clearly and visually demonstrating what is and what is not acceptable behaviour and practice," says Jin Han Baek, the site safety manager who has worked on the safety precautions since the start of the project.



Daelim's site manager Kyung Soo Han (left) and Jin Han Baek, the site's HSSE manager, are both confident that their approach will ensure zero accidents all the way through the construction period.



Daelim has developed a method for communicating what are safe and what are poor working practices on their construction site, which was considered as "best-in-class" in a recent audit by DNV.

Overcoming difficulties

The difficulties faced by BP Global Power in undertaking the development of the project HSSE policy and management framework were numerous. After a late entry of BP into the enterprise, the HSSE development work was undertaken some four months after project commencement – a particular challenge as there were huge organisational differences between the three participating companies.

The HSSE policy also had to be designed to manage cultural and language challenges within a very tight time-frame for delivery of the policy. Indeed, the framework had to be dealt with in a flexible manner but yet implemented efficiently and consistently.

Through a facilitated three day workshop, with senior representatives participating from each organisation, all aspects associated with creating the safety framework were discussed and best practices were established. This inclusive approach meant the companies now share ownership of process and results both individually and jointly.

“In similar projects, this type of activity traditionally has taken weeks or months to complete. Based on BP experience,

policy and systems are often not fully owned by the participating companies,” says O’Leary.

Earning a good reputation

“The safety work undertaken at the site goes beyond compliance with national and local requirements, causing some to wonder if the effort represented an unnecessary cost,” says Harry C.Y. Heo, who is BP’s HSSE manager for the K Power project in Korea. “But there is no doubt in my mind that putting safety first pays off in every sense of the word, including the reinforcement of the company’s brand. In gaining an unprecedented good safety record, which is a goal in itself, we also demonstrate that we are a company which takes people’s safety seriously.”

For Daelim, managing complex safety issues at huge construction sites both internationally and in Korea is part of building the company’s good reputation. But as site manager Kyung Soo Han proudly admits: “Daelim has the best safety record in Korea, and this site has the best safety record in Daelim.”

Both Han and Baek believe this has to do with the employees’ commitment to best practice. “The employees think for themselves and actually take the safety

concerns to their heart. It is a point of pride, and with this emotional aspect in place, combined with clear communication and a good framework ensuring the physical safety aspects, we achieve results that we are proud of. Working with BP we have also improved the way we see safety in broader terms,” says Baek.

Sharing the experience throughout BP

O’Leary is impressed by what site manager Kyung Soo Han and Baek, the HSSE manager at the site, have achieved and says it is a powerful example of successful implementation of innovative safety work. “I am confident that this approach to project management can be applied elsewhere and will contribute to sustainable HSSE performance in many BP projects. It is repeatable across our \$12 billion annual capex portfolio.”

The Safety Experience Training Centre concept was recently shared at an Exploration and Production Emerging Areas HSE Workshop, attended by HSE representatives from BP’s E&P segment from across the world. There is also an action plan in place to share Global Power’s experiences with senior representatives from BP’s Azerbaijan and Algerian business units.

Kristian Lindøe

Towards common rules

In a period of increasing international maritime regulations, the relationship between the IMO, classification societies and shipowners has become increasingly complex. An erosion of the trust placed in the industry by regulators and end-users has led to calls from some in the maritime industry to establish goal-based standards – common rules with clearly stated goals for safety reliability and durability.





Peter Swift, managing director of INTERTANKO, believes that the new regulatory framework for newbuildings will raise the standards of shipbuilding.

We met Peter Swift the managing director of INTERTANKO (International Association of Independent Tanker Owners) to hear his views on the development of goal-based standards, and also on initiatives from class to harmonise structural rules for both tankers and bulk carriers.

According to Swift, INTERTANKO has supported the adoption of common standards across class societies and is encouraged by the progress of the initiative. “Three years ago, INTERTANKO produced an aide memoire in cooperation with OCIMF to define areas of concern with respect to structural matters, including minimum scantlings, corrosion allowances, and various inconsistencies between rules and approaches,” he says. “Today, we feel the same approach can apply to other areas, such as maintenance and machinery.”

INTERTANKO also initiated a discussion with shipbuilders on newbuilding standards. This was taken up by the Round Table of international shipping associations (INTERTANKO, Intercargo, ICS and BIMCO) in discussions with leading Asian shipbuilders’ associations in Singapore, two years ago. Those talks touched on similar issues related to concepts behind the common rules and goal-based standards.

“The goal-based standards are very much supported by INTERTANKO with the idea that the regulator should set rules in accordance with societies’ expectations,” says Swift. “We are familiar with the challenges of ensuring quality. Ships should be robust and designed for operation over a specified minimum number of years in certain environmental conditions. At the same time, it is also important that vessels should be properly maintained, managed and operated by well-trained crews.”

Leadership through cooperation

Swift believes it is the IMO’s responsibility to establish goal-based standards in cooperation with class societies and shipowners. “Harmonised rules and regulations should then be established by those industry bodies qualified and equipped to achieve these standards,” he says, “but at the same time, we need to communicate that these regulations will also need to be subject to continued development. The process should be flexible enough to allow for alternatives which will be guided by a combination of regulation and self-regulation designed to achieve our objectives.”

So far, discussions have revolved around structural standards, but soon, the same approach will apply to everything from machinery to maintenance. Swift says that goal-based standards enjoy widespread industry support and is encouraged by the process. “It is important that we continue to get international support for this standardisation process,” he says. “Similarly, we believe it is important to ensure that we avoid situations where new standards are put in place in reaction to high-profile incidents. Over time, the goal-based standards should incorporate an evaluation process which would allow governing bodies to amend standards as needed in an orderly and thoughtful manner.”

Swift is quick to note that setting standards remains the responsibility of the IMO and related administrations. “The IMO is responsive and functioning in a way most bodies expect,” he says, “but we feel that standards should be set by the flag administrations in a process that involves the industry in discussions or forums, organised by the IMO. We have faith in the IMO, and its ability to recognise the need for practical solutions with appropriate input from industry. If society expect things to move quickly, then we all need to move quickly. There is no excuse for foot-dragging.” →

“It is important to win the support of all class societies”

“Class should compete on the quality of their services, not standards”

Common rules

Swift says that it is wrong to compete on steel weights or standards in the design and construction of tankers and dry-bulk carriers. “We believe developing common rules is positive and are not concerned with fears that common standards will erode competition,” he says. “I know there those who remain concerned that common rules will stifle competitive spirit, but we share their hope that class societies will continue to compete. However, we believe they should compete on the quality of their services, not standards.”

By removing some of the competitive elements that have existed in the past, Swift hopes that the industry will end up with more robust ships designed and built with margins appropriate to the service of the vessel. “We also believe it is important to win the support of all class societies,” he says. “And once we establish common rules, we feel it is essential to open a dialogue about their future development with all interested parties.”

The head of INTERTANKO also noted a few observations. He explains, “Having established common rules, we need to think about their further development. We all recognise that historically, class rules changed because of experience, with individual societies taking these changes through their technical committees and other mechanisms. They had individual experience maybe with fatigue, corrosion rates and such but the feedback mechanism was often limited to the particular society. We don’t know yet what the sharing mechanism is going to be for that feedback in the future, but it is important we find a workable mechanism for sharing experience. Ideally this would extend to involve shipowners and shipbuilders more than in the past. We would be disturbed if one class society, or a group of societies, were gathering knowledge and then having trouble sharing it in a development stage of the common rules.”

He adds, “We do believe very firmly that it is important that class (and hopefully in a good dialogue with industry) talks about how we have learned from experience and how the rules might be amended once they have been established. It’s important that we all think about how we’re going

to take that field experience and share it – which may be a little difficult for some class societies – in a meaningful way that will have comprehensive buy-in.”

As an objective observer, Swift also questions what will be the future incentive for the larger class societies to have advanced research programmes, and how will they sustain these, when frequently they will be applied to a set of common rules.

“This is a challenge the class societies have to think about more than the industry, but we will recognise the value of research in the past in the individual societies. So we would be disturbed if it disappeared totally,” he says.

And the future?

“We certainly see that over time we should be looking at machinery, equipment and systems in a similar fashion to the way we have looked at structures. We accept likewise that we should be talking about establishing standards for maintenance and operation,” Swift says.

While INTERTANKO sees a lot of support for the common rules, Swift openly admits that there hasn’t been quite as much consultation as he would have liked to have seen within the industry. “It’s a difficult process and we realise that there’s a desire to push on. But we need to see the whole package. We will want to know, for instance, more about what buckling methodology has been applied to make sure it’s one we’re happy with. We will certainly want to talk about coating standards. Those are the kind of things that we have yet to talk about,” he says.

Swift concludes, “We will want to understand how sensitive the end product of the common rules is, for example on scantlings, and to changes in any assumptions on future goal-based standards. That will be part of our input to the planned consultation and we look forward to that now that the rules are about to appear. To achieve the year-end target of publishing the common rules, which we support, we recognise that there is a very, very busy period ahead.”

Stuart D. Brewer



From challenge to excellence

“My goal is simple, yet ambitious. I want Alyeska Pipeline Service Company to be the best-run pipeline in the world,” says David Wight, president and CEO of Alyeska.

Today it is possible to believe in such ambitions. 2003 was the best year ever for Alyeska in terms of service, safety and financial results. However, it was just three years ago that DNV raised some significant concerns about the company’s management systems. Indeed, one DNV analyst wrote: “There is a significant gap between Alyeska’s formal business processes and how the work is actually committed.” At that time, the company’s present ambitions would have been unrealistic. →



David Wight,
chief executive officer



Dan Hisey,
chief operating officer



Kathleen O'Connell,
project manager



“I remember how challenging it was,” says Dan Hisey, the chief operating officer responsible for implementing the resulting recommendations. “DNV did an excellent job. These were hard hitting statements, but it was an eye-opener. It is my belief that Alyeska would not be where it is today if what has been done in the past few years had been left undone.”

Answered yes, but...

Alyeska, named after an Aleut word meaning *mainland*, operate the Trans Alaska Pipeline System, a 1,300-kilometre (800-mile) long and 120-centimetre (48-inch) diameter steel pipeline crossing the entire mainland of the huge state of Alaska. In 2004, about one million barrels a day are brought from Prudhoe Bay in the north of Alaska, to the Port of Valdez, the northernmost ice-free port in the United States, located near Prince William Sound on Alaska’s southern coast. On its way, the pipeline crosses some of the world’s most sensitive environmental areas under the watchful eyes of regulators and special interest groups.

DNV’s original task was to act as an external third party to verify the capability and effectiveness of Alyeska’s management system in ensuring compliance with the requirements laid out by the Federal Grant, State Lease and all relevant laws and regulations. After operating the pipeline for almost 30 years since 1974, Alyeska had to seek another 30-year right-of-way in 2004.

While the DNV report concluded that the pipeline system – on a day-to-day basis – met the right-of-way obligations, the obligations were met through the knowledge and extraordinary efforts of Alyeska’s personnel rather than through the strength of its management system. The conclusions reached by the DNV report were tough, but Alyeska recognized that action had to be taken.

Behavioural and cultural changes

“In 2001, our existing compliance management systems had served their intended purpose. The time had come to improve them,” says Hisey. “We had to address root causes rather than just fix symptoms.”

DNV had used strong words in the technical report. But instead of jumping into the trenches to defend its existing system, Alyeska took a positive and creative approach. The COO, being responsible for implementing the recommendations, used even stronger words himself: “It was easier to start when we had so many challenges. We recognised that the path would not be easy or short. The transition to new systems would require the creation of a new ways of conducting business as well as behavioural and cultural changes.”

To stress the relevance of the concerns raised by DNV, some of Hisey’s management colleagues use statements like “*an unhealthy culture*” and “*silo-thinking*” when describing the past.

New management system

Where others might have had a defensive approach, Alyeska took a positive one. They established a System Renewal project to overhaul their entire management system, redefine how business is conducted, and facilitate behavioural and cultural changes throughout the organisation. The project was headed by Kathleen O’Connell, aided by a competent and motivated team. The access to senior management in general, and to Hisey in particular, was visible and positive.

“Our mandate has not only been to address the DNV management system findings, but to go beyond those aspects required for compliance and improve the overall efficiency and effectiveness of conducting business. The overall objective has



Earnest Maxwell,
strategic planning director



been to deliver the strategic objective – replace the management system, improve business processes, and align process measures to deliver results. We’ve delivered the objective by redesigning the major business processes using a combination of project team members, users, and customers and a well-defined and consistent methodology. We built the management system one business process at a time” explains O’Connell.

“They won the people,” says Earnest Maxwell, Alyeska’s strategic planning director, referring to the project headed by O’Connell. “A direction was set, and we kept to that direction. Our ambition is to be the best-run pipeline in the world,” he repeats. “Today a new management system is in place, and our staff has re-discovered how all our working processes are linked to each other. We are no longer working against each other as 900 individuals. We are involving each other and working closer together in a new Alyeska.”

Change the future

Several managers underlined that it was previously hard to understand the information flow within the multiple management systems in place. The System Renewal process was an eye-opener. Inputs and outputs of each business process were analysed - how they were integrated and how each working process was influenced by others.

“DNV helped us understand the magnitude of what needed to be done and shared their experiences with other companies who had similar issues,” says Hisey. DNV entered as an independent third party. No one could question their integrity, and the timing was perfect. We had to take action. However DNV directed us away from the symptoms and towards the root causes, allowing us to formulate a much more robust improvement plan.”

The structure of the project was important. An overall framework was established. A systematic methodology was developed and used. Good use was made of appropriate technology to hold and communicate system information. Users and customers of the business processes were involved in the improvement and roll-out, while the project team was not allowed to falter.

“Everyone involved in our company has been active and had a positive approach to changing the future for Alyeska,” says Hisey. “We have more focus on our core activity - to bring a million barrels of oil through the huge state of Alaska each single day. The goal is still the same, but we are doing the job with fewer people, more motivated, focused and collaborating people, trusting a new management system - and all this with a greater focus and better results when it comes to safety and reliability than before.”

Per Wiggo Richardsen

ALYESKA IN BRIEF:

- Headquarters:** Anchorage, Alaska.
- Dimensions:** 1,300 km pipeline, 120 cm diameter.
- From and to:** Prudhoe Bay to the Port of Valdez, crossing mainland Alaska.
- Peak transportation:** 2.1 million barrels per day – 1988.
- Today’s transportation:** 1 million barrels per day.
- Speed:** One barrel delivered at the north end will reach the south end nine days later
- Owners:** BP, ConocoPhillips, ExxonMobil, Unocal, Koch

A FIRST FOR TEEKAY AND DNV

DNV has issued the world's first Competence Management System certificate to Teekay Shipping.

DNV has announced that it has issued a statement of compliance to Teekay Shipping for its competence management system. The standard used is the DNV SeaSkill Standard for Certification of Competence Management Systems.

This is a unique standard in the maritime world and helps organisations put in place a certified system to develop and manage competence. It is expected to become the standard-bearer of competence management systems in the maritime sector. DNV is the only class society to offer such certification.

The new standard will assist organisations that place competence management on their list of priorities. It sets the bar high enough to ensure continuous improvement in competence management, with regular audits of both on-shore systems and ships, and takes into account both the business goals of an organisation and statutory requirements.

"This is DNV's contribution to making the maritime industry look beyond compliance, when it comes to competence," says Tor E. Svensen, chief operating officer of DNV Maritime. "The STCW Convention was a welcome step in the right direction. At the same time, the best companies are already looking beyond satisfying minimum requirements and focussing on competence as a strategic tool. We at DNV wish to be at the forefront of this development. Our Competence System Standard and the accompanying certification will assist such companies to attain best-in-class status."

The Standard forms part of the integrated structure for competence management being offered to the maritime industry by DNV SeaSkill, the other two services being certification of training courses and certification of personnel.

Raising the safety bar

Teekay Shipping is taking competence management to new heights, establishing as part of its business strategy its own competency management program called SCOPE. Det Norske Veritas recently issued a statement of compliance to Teekay for its system – the world's first competence management system certificate.

Teekay has made significant strides into the global shipping industry in the past decade. Whilst undergoing this period of rapid expansion, Teekay has been able to cultivate a personal approach to its customers. This strategy is opening new doors and further increasing the market potential for the company and its investors.

"Teekay is intent on expanding its activities and the development of a formal competency management system is a logical step in our drive to reach this goal and further our continuous improvement and quality service to customers," says Graham Westgarth, president of Teekay Marine Services.

A listed company on the New York Stock Exchange, Teekay moved its head office from Long Beach, California to Vancouver in 1991. Today, the company has a global network of 16 offices.

As a publicly-listed company, Teekay has a strong desire to position itself as the premier tanker shipping company

in the transportation industry. The company's core values are quality through professionalism, reliability and integrity; responsible safety and environment practices; responsiveness and creativity to customer's needs; loyalty to employees; competitive and entrepreneurial spirit; and continuous self-improvement. Says Westgarth, "Quality of organisations and processes will be more and more visible going forward. It is now a highly regulated industry, with greater demands. Certain standards of operation are customer driven, therefore, operation strategies need to support our business objectives."

Professionalism at Sea

For the last two years, Teekay has been developing its own competency management program which it calls SCOPE (Seafarer Competence for Operational Excellence). According to John Adams, head of maritime human resources, based in Glasgow, "It's our people who help us to achieve world class standards in safety and operations. Teekay developed SCOPE to establish the



As part of its commitment to becoming the premier tanker shipping company, Teekay Shipping is continuously strengthening its best practices

highest standards of professionalism at sea. The program supports our philosophy of continuing professional development.”

The program goes well beyond legislative requirements for certificates of competency and includes Teekay Competencies; Management/Leadership Behaviour Competencies; Overall Knowledge and Understanding; Aptitude; Experience; and Attitude and Motivation.

Explaining the incentive for Teekay Shipping to be certified, Kevin Hewlett, director, seafarer competence & career development, says, “SCOPE allows us to support our staff in their individual development and in their contributions to our overall success.”

The training administrator and computer-based training modules have been provided by Norway-based Seagull. Hewlett explains, “Working together, Teekay and Seagull have developed a new administrative system that will support the adminis-

trative requirements of the program. The system has the capability to handle a very large range and number of competencies and training requirements for all ranks – and there are approximately 30 Teekay specific competencies within each rank. In addition, onboard computer-based training is used extensively.”

Code of Practice

Commenting on DNV’s competence management system, Hewlett says, “We discovered that Teekay and DNV were both separately developing →



Graham Westgarth is spearheading Teekay's drive to strengthen its working practices

competence management concepts. DNV perceived an industry need to compile a Code of Practice, which they have done through their DNV SeaSkill unit. We saw this as being very beneficial, as it brought together two sides of the shipping industry – the assessor and the operator. The first stage of the audit was recently carried out in Teekay's Glasgow office. The next stage of the certification process includes the audit of the entire Teekay Shipping fleet.”

Business is going well for Teekay. A good foundation for the business was created by the company's success in the early 1980s. Over the past five years, the company has gone from being an owner operating 43 ships to an organisation now operating over 100 ships and managing another 20 or so. In this process, the company has acquired and merged with other shipping companies and taken them into the Teekay fold.

Teekay has now expanded into the LNG sector, as well as having already established a significant presence in the shuttle tanker market. The company is still focused on building its tanker business further, with a blend of fixed-rate and spot tanker segments.

Investing in ships and people

Comments Westgarth: “At Teekay, we are proud of our achievements in recent years, but we are continually striving to improve. With our ongoing investment in maintaining a large, modern, high-quality tanker fleet, the equipment side is well in hand. We've been active regard-

ing personnel initiatives. The operational procedures area is also important to us and we have, over the past few years, strengthened our best practices through several initiatives, including the SCOPE system, shipboard training and refined ship safety-performance measures.

As one of the worlds leading shipping companies, Teekay has gained a reputation of having a better knowledge of the shipping business than many others. This has placed greater demands on the company, but has also given Teekay a competitive edge.

Westgarth describes the competition as tough, but emphasises that Teekay is committed to maintaining its market position and has a defined strategy to meet its customers requirements, and to assist them wherever possible.

“Teekay views the increased emphasis on environmental protection, personnel safety and improved operational practices in the shipping industry as an opportunity to continually improve the overall integrity of its operations. Ultimately, we also believe that our customer-oriented approach will differentiate us from our competitors,” he says.

“This approach is being made easier through our work with DNV,” concludes Westgarth, “and based on our experience so far, we're confident that the competence system work with DNV will help us achieve our goal of becoming the premier tanker shipping company while continuing to provide our customers with the best possible services.”

Stuart D. Brewer

Tsing Tao Brewery:

A taste of the world

Tsing Tao has noticed how markets overseas have developed a taste for its product and is eager to quench this thirst by growing its export capabilities. →



Tsing Tao beer was the first Chinese limited company to be listed in overseas stock markets, and the international aspects of the company has been present throughout its history. Quality assurance has been an integrated part of Tsing Tao's growth.

Tsing Tao beer is by far the most famous beer in China and is probably the only Chinese beer with a strong international brand. As the company has proved through 100 years of growth, it takes more than a popular product and great taste to succeed. Consistent, hard and systematic work with all aspects of the operations forms the foundation for a strong brand both in China and abroad.

The Tsing Tao group started off with an ISO 9001 certificate for its management systems in 1995. Soon it expanded the scope both in terms of number of factories and branches to be certified and in terms of going for both environmental and safety management systems certification.

“By integrating all these standards, Tsing Tao has been able to use them more efficiently in the systematic work to improve the operations on all levels,” says Xiang Hong Qiao, director of the Management Enhancement Department. “It has been a gradual process. Of course we did pursue comprehensive quality improvement work before adopting the ISO standards in 1995, but by using one standard, we could start streamlining and standardising all our operating procedures and practises. And through the integrated certification scheme, this process has been developed further.”

Continuous improvement

“When we first started with certification, the focus was very much on the non-conformities,” says Qiao. “At first, our employees feared this would only create a potential for blame and more work. But soon we all experienced that this had nothing to do with blame, but improving our processes. And the way visible improvements have come about, it demonstrates that certification helps everyone in the company do their job better, rather than point the finger at the person who doesn't.”

“By adapting the ISO 9001:2000 standard, *service* became one of the things we concentrated on in our improvement work. And in the period from 2001 to 2003, our customer



The Tsing Tao brand is sold in more than 40 countries worldwide and accounts for more than 80 percent of China's total beer exports. In fact, Tsing Tao is the number-one branded consumer product exported from China.

satisfaction score increased by 11 points, from 71 per cent to 82 per cent as a direct consequence,” she explains.

“We have been very satisfied by the work of DNV auditors. So much that we want more from DNV. We want the DNV auditors to continually improve their competence so that the certification process itself is continually improved. And we would like to see DNV using its international network and experience to facilitate seminars and conferences where big companies can come together and share experiences and best practices.

Beyond the ISO standards

Hua Li is technical director at Tsing Tao: “There were tremendous changes in terms of the way we worked. The transition to the 2000 version of ISO 9001 provided a different approach to our practises. And the DNV auditors also brought with them a sense of fresh air. We appreciate the DNV auditors’ competence and broad insight into management skills and best practices. This will become increasingly important as we want to move beyond the ISO standards.”

At present, the company’s primary objective is to increase export to Taiwan, and to achieve this goal, Tsing Tao beer has setup a factory in Taiwan. Then Tsing Tao beer will gradually expand export to other parts of Asia while maintaining its established market shares in Europe and the US.

“The escalating competitiveness in the international markets is matched by the increasing interest shown by non-Chinese companies for Tsing Tao’s domestic market. This means that continuous improvement at all levels will play a vital role in our success. And certification that can push a company beyond mere compliance with standards is what can give Tsing Tao the edge,” concludes Madame Qiao.

Kristian Lindøe



Jin Zhi Guo, CEO of the Tsing Tao Brewery Company is looking to further expand its international business.



An internet kiosk at the Tsing Tao museum.

DNV benefits from growth

Rapid expansion in Asia's shipbuilding and shipping activities, springing from sustained economic growth, is offering new opportunities for DNV



Photo: Singapore Maritime Port Authority

The focal point of some 400 shipping lines, Singapore is the world's busiest port in terms of shipping tonnage.

Ragnar Hansen is DNV's recently appointed regional manager for South East Asia, and former head of DNV's marketing division. He emphasises, "Things are looking good. Today we have just one-third of our business in Scandinavia and the rest of it is from outside Scandinavia. In the past six months we have gained about 40 percent of all classification business for new-buildings in South Korea, and 20 percent in China.

"DNV has a network of 70 offices in 25 countries in Asia, and supplies a full range of technical and consultancy-related services supported by resource centres in Pusan, Shanghai and the Asia Pacific base in Singapore, which has been established for more than 38 years.

"Asia leads the world in newbuildings with around 90 percent of the market; DNV gained a market share of 17 percent of all newbuildings ordered in 2003. Recently, new orders and

within Asia

class transfers have helped to increase the DNV fleet to over 100 million grt – an all time high,” says Hansen.

DNV has kept a close eye on the development of Asia Pacific’s shipping industry. It’s been a fast changing, fast developing industry and still is, but what was relevant 10 years ago in Singapore isn’t as pertinent today.

Maritime cluster

“Singapore will undoubtedly retain its world-leading position as a major transshipment centre and also continue its role as a shipbuilding and repair centre. However, Singapore will probably enhance its position as a ‘maritime cluster’ with increased activities in shipowning, ship management, ship finance, legal and other marine-related services,” states Hansen.

The majority of DNV’s work in Singapore is aimed at supporting shipowners with class matters relating to day-to-day operation of their vessels. However, to complement Singapore’s efforts to enhance its capabilities DNV will continue to offer training courses. Says Hansen, “The need for training is tremendous; and like Europe, the demand by Asian shipowners for skilled shore and sea-based personnel is growing significantly every year.”

Value-added services

Along with its class and training services, the Singapore office is offering its customers a wide and expanding range of value-added services from risk management to the testing of bunker fuel.

Nick Roper, head of the Maritime Service Centre comments: “In response to changing market conditions, we are actively developing both new and existing services from life-cycle risk management and integrity management to safety and environmental consultancy and R&D projects. DNV has recently established a Maritime Solutions consultancy office in Singapore to offer these services locally. We believe that the ability to swiftly respond to change, and a committed approach to further innovation and improvement, will help position us for the future.”



“Asia is an enormous market and, for practical reasons, it is important to have a prominent presence with a good mix of competence,” says Ragnar Hansen, here with Nick Roper (standing).

Det Norske Veritas Petroleum Services (DNVPS) is the largest tester of bunker quality levels in the world – ensuring that contaminated fuel is avoided and maintenance costs reduced. “DNV has strengthened its position in fuel quality testings, with a 75 percent share of the world market,” says Per Holmvang, the newly appointed managing director of DNVPS. “Declining fuel quality has over the past years led to a range of engine failures, creating dangerous situations. As more contaminants and wastes find their way into the bunker delivery chain, a continual quality surveillance is essential to help ship operators verify if the fuels delivered to their vessels are safe for use.”

DNV and shipowners both know that detentions cost time and money. DNV is committed to supporting owners in quality ship operation while authorities increase their efforts to crack down on substandard ships and owners. Recognising this, DNV deleted 29 vessels from class last year, and has low detention rates in the three principal Port State Control regions.

“The fact that DNV has one of the lowest detention records reflects our enhanced efforts. It also demonstrates that we have customers who value quality highly, and that our follow-ups work,” says Hansen and concludes, “Now there is a new challenge on the horizon, with shifting trade patterns in South East Asia. We have to follow the direction of the trade, and we will expand our network and services to be close to our customers.”

Stuart D.Brewer

First-ever series of VLCCs in China completed



Iran Delvar, the first Very Large Crude Carrier (VLCC) in a series of five for NITC, all built to DNV class.

China's first-ever series of Very Large Crude Carriers (VLCC) have all been built to DNV class. The last in the series of five ships was recently delivered to owner NITC.

The largest shipyard in northern China, the Dalian New Shipbuilding Heavy Industries Co Ltd (DNS), delivered in June the Iran Darab. This was the final Very Large Crude Carrier (VLCC) in a series of five to Iranian shipowner the National Iranian Tanker Company (NITC). The DNV-classed vessels are the first VLCCs ever to be built by a Chinese shipyard.

The first 300000 dead weight tonnes VLCC, Iran Delvar, was delivered in 2002 after 24 months of construction, while the last vessel in the series took only 16 months to build from steel cutting to delivery.

Close cooperation

The cooperation between DNS, NITC and DNV was close-knit throughout the project, with several divisions within the DNV group having contributed to the project's overall success.

Areas of influence included vibration and noise evaluation, shaft alignment calculations, and ballast water management plans for all five vessels in the series.

DNV continues work at Dalian

NITC expressed its gratitude to DNV for its support with the following statement: "NITC would like to congratulate and thank all those concerned for their trust, contribution and cooperation during the project and we look forward to its continuation in the future."

NITC is planning an extensive new building program including LNG ships and VLCC's while DNV work at DNS continues with two dual classed VLCC for the China Shipping Group, one of the main shipping companies in China.

Wall Street Institute earns quality certificate



The Wall Street Institute School of English is one of the few English language instruction schools to be certified to ISO 9001:2000.

The certificate covers design, development, implementation and quality control of teaching methods for training and learning English for the Barcelona facilities. "This recognition will set us apart from our competitors," says Tim Daniels, president of the Wall Street Institute.

"The achievement of ISO 9001: 2000 certification reflects our continuous effort to provide our students with superior product quality and English language instruction that is first rate. We are proud to have achieved this formal recognition."

Wall Street Institute School was established in 1972 to help people wanting to learn English for professional and personal reasons. Today the Wall Street Institute School of English is an international institution with over 350 centers in 26 countries. Over 140,000 students learn and improve their English at the various locations each year. It has headquarters both in Baltimore, the United States, and in Barcelona, Spain.

Polish McDonald's ISO 14001 certified

DNV Poland has issued a corporate ISO 14001 certificate to the Polish McDonald's restaurant chain.

The Polish McDonald's chain includes 180 restaurants.

"Receiving ISO 14001 certification is a reward to all of us for years of hard work in the area of environmental protection," commented Tomasz Kurpiewski, the head of the Polish McDonald's environment department as the certificate was handed over.

The certificate was handed over at a formal ceremony held recently.

"This certification confirms that the Polish McDonald's chain considers environmental issues to be a priority," says Wojciech Piskorski, the area manager at DNV's office in Katowice, Poland.

"Receiving this certificate is a great motivational tool to make us even more involved in the field of environmental care," said Kurpiewski.



At the ceremony, from the left, Tomasz Slupek, sales manager DNV Poland, Tomasz Kurpiewski, head of the Polish McDonald's Environment Department, Dragos Pavicevic, managing director of the Polish McDonald's, and Wojciech Piskorski, area manager DNV Poland

McDonald's started operating in Poland in June 1992 by opening its first restaurant in Warsaw. The Polish McDonald's chain today employs 10,000 people. Almost all the raw materials they use come from domestic suppliers.

The value of extended Class



The main focus of the nautical class notations is on the total bridge system, involving the streamlined integration of human operation, technical systems and onboard procedures

A new study of all DNV-classed vessels of 6,000grt and above clearly shows the safety value of additional Class Notations.

The accident rate - collisions, groundings and contact damage - for vessels holding the "nautical" class notations NAUT-AW and NAUT-OC built since 1990 has been half that of ships without them.

Since such events account for about half of all marine accidents, this statistical difference strikingly confirms the value of operational aspects being covered by additional class notations. Their main focus here is on the "total bridge system", taking into account bridge procedures, the human operator, the technical system and the man/machine interface: all these play a major role in ensuring the safety of a vessel at sea.

DNV's proactive approach to ship operation is its new guidelines for the bridge design of offshore service vessels, forming the class notation NAUT-OSV. Developed in partnership with Norsk Hydro, Statoil and OSV operators, the aim of the guidelines is to optimise the design and layout of bridge equipment, and extent of the information to be handled by bridge personnel in different operations.

First DNV certification rules for wind turbines

DNV issues design standard and certification regime for offshore wind turbines, comparable with Class Rules for ships.

"The newly established certification regime for offshore wind turbines is comparable to Class Rules for ships," says Jan Behrendt Ibsø, general manager for DNV Global Wind Energy.

A supplement to existing standards

DNV's certification regime will be a supplement rather than a competitor to the already existing international standard for wind turbines, IEC. As of today there are no national or international standards covering offshore wind turbines.

Investments in offshore wind projects are anticipated to reach to 13 billion Euro.

Four standards

The first design and certification standard intends to cover this gap, by including requirements for everything below the upper part of the wind turbines (the nacelle) at sea.

The next standard, to be issued by November, will cover the blades. Thereafter there will be issued a standard for wind turbines' electrical components, and subsequently a standard covering the wind turbines' gearbox.

"The wind energy market is about to become global. Today we have identified projects in France, the Netherlands, Belgium, Ireland, United Kingdom, Germany and Sweden. Spain is in the pipeline together with the US," says an optimistic Jan B. Ibsø.



Jan Behrendt Ibsø, general manager for DNV Global Wind Energy, believes that the wind energy market is about to become global.

What, no dolphins?!

Challenging the industry's ability and willingness to be accountable, DNV Consultants Glenn Corr and Nick Jackson take a closer look at the discrepancy between what the annual report promises and companies do...

Situation

For a number of years, legislation in many countries has demanded increasing corporate accountability and social responsibility. And while many of the responsibilities placed upon company directors have not changed in decades, societal expectations have become increasingly demanding.

Complication

We are more accountable than ever before. Society demands it, the law reflects it. Today, the meaning of the phrase "Responsible care" has a different meaning than it did in the 1980s, and society (quite rightly) has pressed for more transparency in how companies deliver on their promises to be socially responsible.

The days of the annual report being a narrative of past performance, heavily biased towards the image the company wishes to portray, are coming to an end. Global scandals have increased the pressure and tempo for organisations to present a balanced account of their activities, with more focus on forward looking intent and viability.

The public face of organisations is being challenged. There is increasing pressure to show that which lies behind the mask. This trend is reflected by the lack of tolerance for that corporate sin – "green-wash*". Companies can no longer hope that by simply including images of dolphins in their corporate literature will be sufficient to demonstrate their deep-rooted concern for the environment. Stakeholders are demanding facts, not pictures.

Furthermore, the demand for increased transparency and a company's ability to justify its actions is paramount. Non-governmental organisations (NGOs) and society in general are applying increasing pressure to force governments, local authorities, industry, and commerce alike to be more transparent. These dramatic changes have created some complex challenges. Organisations have to be "good corporate citizens". To ensure their survival, industry leaders have to set the standards, while communities have organised in an effort to be heard, respected, and consulted.

Question

What does an organisation have to develop, demonstrate and sustain, in order to be a good corporate citizen, neighbour, employer and provider?

Answer

Organisations have to accept and understand that society has expectations of the business community and that the business community has a responsibility to meet those expectations. Even if that truth is painful, industry must be *accountable* for its activities and the leaders of the industry have to take personal responsibility for what they do (or don't do).

This means that industry has to be more transparent than it has ever been before. Transparent reporting and operational delivery (the way we do business) is the "norm", so that it can be assessed, understood and, if required, challenged.

Leaders have to be visible and active. All personnel in positions of influence must accept their associated accountability, whether they are executives, non-executives or have any managerial authority within any part of the organisation.

Leaders have to be responsive to new challenges, embrace change and be available to their stakeholders. This all demands flexibility. What works today may not work tomorrow. Old norms will be challenged, new norms will be temporary, and an organisation's ability to respond to changing demands will be constantly placed under pressure.

How ready is industry today to open its doors, books and hearts to public scrutiny? This is a key question all organisations must face, and to do so effectively requires transparency. Sufficient corporate transparency will demonstrate a company's future viability, show the impact it has on all stakeholders and prove that the risks it faces, and the risks it poses to others, have been identified, understood and acceptably managed.

The question remains – how ready are you?

*Green-wash: (gren-wôsh) –washers, –washing, –washed 1) The phenomenon of socially and environmentally destructive corporations attempting to preserve and expand their markets by posing as friends of the environment and leaders in the struggle to eradicate poverty. 2) Environmental whitewash. 3) Hogwash.

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