

Oil and Gas Communication Challenge

– a story of untapped
business opportunities

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Text: Stig H. Christiansen, CEO
Photo: Ørjan Gjedrem

LEADER

We have since our last issue of add value developed add energy further and become even more international. In early July we announced the combination between Lucid Consultants in Perth (now add lucid) and add energy. Through this combination our competence house is strengthened internationally in the areas of petroleum, production and reservoir engineering, and we have further widened our global client base. We are very pleased to have add lucid joining add energy. Please refer to www.addenergygroup.com for further information.

As many would know, add energy is already a well established provider of expertise, advice and support services in the areas of crisis and emergency management and business continuity, both through add isrm in Australia and through add upstream in Europe. We are now making commitments to strengthen our team here in Europe with expertise in the area of communication, reputation and stakeholder engagement. In this process we will also work to strengthen our internal links across half the globe to ensure collaboration and lateral learning between add isrm and add upstream. Both for the benefit of our clients as well as our own colleagues. We believe add energy is uniquely positioned to become a leader also in these areas.

Over the last couple of months the world has yet again been shaken by macroeconomic turmoil and uncertainties. So far the oil price has, however, kept up well and the activity and spend level in our industry has continued to raise. Although somewhat more cautiously, we remain optimistic about the activity level and opportunities for add energy in our industry – fundamentally driven by a need for energy provided in a safe, compliant and environmentally friendly manner. Exactly what we in add energy are all about.

Introducing

This issue of the add value magazine focuses in particular on Australia, further efforts in the area of communication, reputation and engagement, enhanced safety and risk management focus post Macondo.

FACTS ABOUT ADD ENERGY GROUP:

add energy group is an international and independent competence house of integrity and Well Specialists with three main business segments; Integrity Assurance, Well Management and Risk & Well Engineering. The company is an international provider of competence, software and software supported services and solutions to the energy industry. The vision is to be the preferred supplier of competence and innovative solutions in niches of the energy market.

- add energy group has approx. 275 employees and consultants where approx 130 of these have a permanent base outside Norway. Proforma turnover for the group in 2010 was about MNOK 465
- add energy is owned by the Stavanger-based Private Equity company Progressus together with employees and consultants in add energy. The number of shareholders totals at approx 100
- add energy group has offices in Stavanger (Headquarters) and Oslo (Norway); Houston (USA); Aberdeen (UK); Muscat (JV in Oman); Singapore, and Perth, Melbourne and Brisbane (Australia)

NEWS IN BRIEF

add energy grows further internationally

STAVANGER/PERTH; add energy group as (add energy) and Lucid Consultants (Lucid) have decided to join forces. Lucid is a specialist provider of competence and services to the major oil & gas and geothermal companies in Australia. The company was founded in 2004, is headquartered in Perth and has recently also started building a base in Brisbane related to the new massive gas projects on the east coast of Australia. Stig H. Christiansen, CEO of add energy, says; “Lucid is known as the leading consultancy within its areas of expertise in the Perth area and has a solid reputation and a strong growth record over the past years. Lucid fits very well with our vision, strategy and business model. The combination represents a further strengthening of add energy’s industrial growth in Australia which commenced October 2010 with the combination with add ips in Perth and Singapore and add isrm in Melbourne. Davide Bruno, Managing Director of Lucid says: “Lucid welcomes the opportunity to work along-side add energy colleagues and enjoy the excellent reputation they have around the world.

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New services - add communication and reputation services (add crs)

ADD CRS IS NOW A REALITY. The new unit will offer services like:

- Stakeholder engagement
- Media preparedness
- Media training
- Strategic advice and exercise support

add crs will also support customer organizations in processes related to strengthening core values and cultural identity. The add crs services will be delivered in close relation with other ERM (Emergency Response Management) deliveries within the add upstream portfolio, such as:

- Crisis management courses
- Management and ERM for Control Room Operators
- Next of kin handling
- ERM planning etc.

add crs will be part of a strong and internationally acknowledged specialist environment within the add energy group.

A lucid view on new industry challenges

Our industry is entering a new age of hydrocarbon extraction. Economically marginal deep water environments, high temperature and pressure reservoirs, flow assurance issues in subsea systems, complex geological environments requiring novel well completions are just a few challenges that require innovative solutions for development feasibility and production optimisation.



lucid - adjective

1. easily understood; completely intelligible or comprehensible: a lucid explanation
2. characterised by clear perception or understanding; rational or sane, having a clear mind: a lucid moment in his madness
3. capable of thinking and expressing yourself in a clear consistent manner, "a lucid thinker"
4. shining or bright

THE SELECTION OF DEVELOPMENT CONCEPTS for petroleum reserves is an iterative process that requires collaboration amongst multidisciplinary teams: subsurface (geosciences, reservoir engineering, petrophysics), wells (completion, drilling engineering and production technology), and subsea (flow assurance, pipelines, facilities). This selection process involves rigorous testing of every uncertainty whilst ensuring safety, cost and technical feasibility. Providing experienced, multidisciplinary professionals is a valuable proposition to operators who are navigating this challenging process.

FOUNDED IN 2004 with its headquarters in Perth, Australia, add lucid has 30 professionals providing specialist consulting services to the major oil & gas and geothermal companies in Australia. add lucid does not compromise with its technical competence, employing only the best in class technical experts in the industry. This strategy ensures our clients receive a consistently high level of technical advice, decisive recommendations, on time, every time.



Text: Jordan Hepton,
Senior Completions Engineer,
add lucid



add lucid offers a diverse range of consultants with expertise in areas such as:

Field Development Planning and Auditing

add lucid has the experience to lead subsurface teams or even provide key members of the subsurface and completions team required to put in place an oil and gas field development plan (FDP). Engaging and understanding the requirements from regulatory authorities is key in delivering a comprehensive FDP that addresses and mitigates all risks as well as capturing the full range of subsurface uncertainties. add lucid has also provided audits and reviews of existing field development plans as independent assurance.

Integrated Production Modelling

add lucid is advanced users of the Petroleum Experts suite of software that integrates the modelling of the reservoirs, wells, subsea architecture and surface facilities. This integrated model provides the most robust forecasting tool since it ensures that all dependencies, constraints and schedules are honoured throughout all parts of the production system. Once constructed, the tool can be used for mid to long-term forecasting as well as short-term production optimisation.

Production Technology

add lucid has specialist Production Technologists that have strengths in modelling the entire production system. This allows us to be involved throughout the entire field life-cycle from conceptual well design to detailed sandface, lower and upper completion design, field development screening options, pipeline sizing, through to production monitoring, optimisation and troubleshooting.

Reservoir Engineering

add lucid have specialist Reservoir Engineers that can build and run dynamic reservoir simulators using most commercially available software packages for gas, retrograde-condensates and oil fluid types using black oil or fully compositional fluid models. Where applicable, higher level screening models can also be built, using material balance or decline curve analyses for forecasting and economic screening.

Well Completion Design

add lucid have specialist Completion Engineers that can be involved throughout the life-cycle of a well from conceptual design, basis for design through to detailed completion design, factory testing, sub-assembly make-up and finally, completion installation. add lucid have particular expertise in high temperature, high pressure applications as well as subsea, high rate gas wells.

Well Site Supervision

add lucid have specialist Well Services Supervisors that can plan and execute all types of well interventions (onshore and offshore, subsea) supervising a range of service company personnel to execute a range of electric-line, slick-line, hydraulic work-over and coiled-tubing activities. add lucid also have expertise in wellhead (tree) maintenance. [ae](#)

Delivering Energy Security for Western Australia's Gas Market

Western Australia has the most gas-dependent economy in Australia. Natural gas provides more than half of WA's primary energy requirements. Natural gas also fuels at least 60% of the state's electricity generation

IN JUNE 2008, Western Australia suffered a 30% reduction in its natural gas output following an explosion at a gas processing plant, off the northwest shelf, forcing stakeholders to consider options for current and future gas supply disruptions. A government-commissioned report, published in the aftermath of the incident, identified a number of gas supply mitigation measures for the future. It included " a gas storage option for the gas market utilising between 35 and 100 terrajoules per day (TJ/d) from a gas storage reservoir...". At that time, our client, APA Group, was approaching the end of a 3-year study of the Mondarra gas storage facility with a view to expanding its capacity.

UNDERGROUND GAS STORAGE (UGS) is well established in North America and Europe, with the concept of UGS growing around the world. UGS facilities are now considered to be a vital element in gas transmission infrastructure. The raison d'être for UGS is to store gas in large volumes which can be used to provide security of supply. Additionally, it enables large customers to smoothen supply and demand peaks and troughs, minimising their exposure to high-priced gas during periods of peak consumption.



Text: Don Kennedy
Staff Drilling Engineer
add ips

"Gas storage wells experience large variation as the temperature and pressure in operation cycles between production and injection mode"



THE MONDARRA GAS STORAGE FACILITY is located 360 km north of Perth, Western Australia. It is owned and operated by APA Group who plays a major role in transportation of natural gas in Australia, through ownership and operation of high-pressure, gas transmission pipelines. Mondarra is a depleted gas field and well-suited for gas storage with its competent cap rock and tank-like containment produced by local geological faulting. 20 Petajoules (PJ) of native gas was produced from the reservoir between 1972 and 1994 and transported to the gas market via the Parmelia Gas Pipeline. In 1994, Mondarra was converted into a gas storage facility, capable of injection and production rates of approximately 10 Terrajoules/day with a total storage volume available of 3 Petajoules.

IN JULY 2009, add ips joined the existing APA subsurface team to provide planning, engineering and drilling operations management for a Mondarra Gas Storage Facility expansion. The expanded facility, scheduled to be completed in the first quarter of 2013, will provide a tenfold increase in production rates and a fivefold increase in storage capacity. It will provide Western Australia with in excess of 120 TJ/day of gas for several weeks in the event of a shortage. APA were very enthusiastic about utilising the add ips well construction process (WCP) and design & operations manuals to ensure sensible, safe and cost-effective execution of the work scope. The add ips ethos of proper planning to minimise project risk in the operations phase harmonized with APA Management, given their limited exposure to subsurface projects.

FOR THE ADD IPS TEAM, the first step is always to correctly define project goals, objectives and known challenges via a Project Definition Statement. The next definitive phase comprised pre-FEED investigative works to establish a strategy for drilling the sub-normally pressured reservoir, manage a rock mechanics study, review well construction metallurgy and appraise well completion options. Gas storage wells experience large variation in temperature and pressure as the operation cycles between production and injection mode. Additionally the asset has a 20+ year design life; well integrity is a fundamental consideration for these assets. This phase also involved visiting the project site; performing high-level reviews of existing subsurface documentation, geological and reservoir briefs, and well offset data held by APA.

WITH THE PRE-FEED STUDIES COMPLETED, the team set about producing the Well Basis of Design (BOD) upon which a drilling rig was selected and long-lead equipment procured; this included wellheads and Christmas trees, casing & tubing strings and well completion components.

Detailed engineering and operations planning followed, based on the BOD, with an emphasis on procuring the numerous services and equipment required to drill wells. The final deliverable in this phase was the preparation of detailed Well Construction Programmes for the drilling and completion operations. The well designs featured large-bore (178 mm diameter) upper and lower completion strings/Christmas trees to facilitate the required gas flow rates, to a well depth of nearly 3,000 m.

THE DRILLING OPERATIONS PHASE included rig mobilisation, drilling, evaluation and completion of the wells, and subsequent demobilisation of rig equipment and materials. This Phase was managed and supervised by the add ips Operations Team, comprised of a Drilling Superintendent, day & night Drilling Supervisors, Operations Engineers and an HSE advisor. The geology in the reservoir proved to be slightly elusive and the

operations featured a contingent, cased-hole sidetrack to locate the high-permeability and porosity required. Operations were successfully executed with zero lost time or medical treatment injuries, on-time and on-budget. The rig was released to the next customer on 24th December after three months of site operations, just in time for Christmas.

DRILLING PROJECT PHASES

- Phase 1 - Project Definition Studies
- Phase 2 - Pre-FEED Studies
- Phase 3 - FEED (Well Basis of Design)
- Phase 4 - Detailed Design & Operations Planning
- Phase 5 - Well Construction Operations
- Phase 6 - Recap and Project Close-Out

AS WITH ALL PROJECTS, new relationships were created lessons were learned. The 2010 Mondarra drilling work scope was completed with the preparation of comprehensive End of Well reports in early 2011. The add ips team continues to support APA's current and future subsurface endeavours and have recently been involved with a rig-less intervention on existing wells in the field using coiled-tubing technology. APA's expansion project has been successfully underpinned by a long term gas storage contract with WA's largest electricity producer, Verve Energy. [æ](#)



▲ Mondarra Drilling aerial, December 2010.

Taking care of reputation is taking care of business

Knowing your stakeholders is crucial to a successful communication strategy

UNTAPPED POTENTIAL: The Oil and gas industry is one of the world's most professionalized businesses. - at least when it comes to the extensive use of structured management systems, highly skilled technological expertise and the implementation of complex and well-designed organizational models. As importantly, the industry has a long history of building and strengthening the safety culture. The results are good - the industry is world-leading in risk management.

IN THIS PERSPECTIVE it is striking how unprepared some companies are in handling their communicational challenges. The industry representatives often show a great lack of insight in how they shall communicate towards different stakeholders, and insight is often reduced to practical crisis management. Why is it like that, and what can be done to raise the level of insight and performance within one of the world's most important industries? In the following four sections we will try to shed light on this situation:



Text: Tor Bjarne Olsson
Head of Communication and
Reputation Services
add crs

POWER AND INFLUENCE: Oil and gas managements are representing a powerful industry, controlling resources critical to world prosperity and generating enormous values to the society. At least it has been like that when we look at the industry's history around the North Sea and in the USA. In these countries we have had the pleasure of operating within a safe and relatively predictable political framework. In this perspective, it has perhaps not been necessary to give communication and openness priority. The last years, and especially after the BP Macondo incident, the industry as a whole has shown a good deal of will to learn. Unfortunately, there is still a way to go. We still see that fragments of former CEO Tony Hayward's media statements are used as examples of unprepared communication. In such situations it is important not to forget that Mr. Hayward was one of the most thought of leaders within the industry before Macondo.

STRUCTURE AND METHODOLOGICAL APPROACH: Communication and reputation may involve some quite complex activities and must be founded on a solid professional platform. For many oil and gas representatives knowledge about these methods is not part of their primary competences.

There is for example a broad spectre of standardized methods and tools making it easier to establish a good communication strategy. A well founded stakeholder analysis can clarify the most important actors among the stakeholders; who they are and how to communicate with them. We in add crs have a lot of examples showing that the use of such methods can enhance the management's understanding of both the complete picture of stakeholders and how to engage with them through communication to achieve important goals.

Stakeholder communication is a two-way process. Highly skilled knowledge secures a good result for all parties.

A TOO NARROW PERSPECTIVE: We often see that the understanding of communication challenges is reduced to media handling or declaring simple messages in a crisis situation. This is only a very limited part of what communication is about. In a historical perspective it is understandable that oil and gas representatives have this approach - undoubtedly crisis communication was the real thing some years ago. But today a good crisis communication and media handling must be founded on a solid communication platform reflecting the core values of a company. Such a platform is developed through good preparatory work, including stakeholder analysis, message understanding and training.

In many countries the authorities have clear expectations about how companies should communicate towards the surroundings in a crisis situation. In Norway for example, the Petroleum Safety Authority expects Oil & Gas operators to place this responsibility on the top management level. This requires of course that top management representatives have required competence and skills.

COMMUNICATION AND BUSINESS CONTINUITY: It has probably never before been a closer relationship between a company's success and value of a business, and the management representatives ability to communicate what they are doing; their vision, mission and goals. Some players in the oil and gas industry have understood that as a fact, while others still have a way to go. This is somewhat of a paradox, given the enormous financial values that are controlled and created by the industry. In our work we seldom see that a company is sufficiently prepared with good plans for managing the communicational effects of an undesired event. Hopefully this will change to the better going forward. [↗](#)

The way forward
“Openness
is a virtue”

Petroleum Safety Authority, Norway

This statement from the Norwegian PSA can stand as a guiding star for the oil and gas industry, certainly on the Norwegian Continental Shelf, but ideally also globally. And this will put additional demands on the industry with respect to how the players communicate towards and engage the stakeholders; being owners, partners, local or central authorities or the society in general.

In practice this will add challenges to the personnel that are given the responsibility to act as advisors on communication in order to build and protect reputation and licences to operate. In the future we can hope for more professionalism, more use of qualified tools and methods and a closer relationship between the communication strategies and the business strategies. This will be reinforced by the fact that the industry as a whole will be held collectively responsible for how each single company and person perform and communicate towards stakeholders and the society at large.

The Macondo incident is a recent and strong example of how the industry as a whole comes under scrutiny after an incident. [↗](#)

“Establishing a stakeholder matrix was of great value - both the process and the final result”



Asset life-time extension

Keeping existing offshore structures in good repair and securing a second life for ageing offshore structures



Text: Dave Watson
Managing Director
add latent

THIS IS A NEW BUSINESS initiative between add latent and add upstream. Scott Fraser (add latent) and respectively Kjell Terje Roverud and Roald Tveitaskog (add upstream) have gotten together to instigate a future installation life extension project portfolio. It was introduced for the September 2011 oil show week in Aberdeen. There has been interest shown in Norway and in Oman which is encouraging.

THERE IS A NEED for oil & gas operators to be increasingly aware of Asset Integrity, given the industry's dependence on Asset Lifetime Extension. Questions must be asked about design intent of the Asset's Lifecycle towards Life Cycle Extension.

BETWEEN 1996 AND 2011 there have been numerous loss of containment incidents reported that can be attributable to ageing plants. The limited information provided in RIDDOR* about the underlying causes means that it is difficult to identify which events may be age related. Thus the actual number could be much higher than that quoted.

ACROSS EUROPE, between 1980 and 2006, it is estimated that there have been 96 incidents reported in the MARS** database relating to major accident potential loss of containment which are estimated to be due to ageing plants. This represents 28% of all reported 'major accident' loss of containment events in the MARS database and equates to an overall loss of 11 lives, 183 injuries and over 170 Million € of economic loss. This is not acceptable.

AS THE MARS DATA provides the more detailed and comprehensive insight into the incidents and causal factors and is specifically related to potential major accident hazard events, it is considered that this represents a more realistic indication of the extent and severity of ageing plant and its contribution to major accidents. This leads to the conclusion that ageing plant is a significant issue.

HEALTH AND SAFETY EXECUTIVE (HSE) field inspectors often have to consider the Operators' safety justification for continued use of ageing plant taking account of a variety of issues such as usage, design life, known research, known operational and failure history, maintenance and inspection history, etc. The issues also need to be considered against a background of increasing competition from overseas, and the pressure on resources and investment which this has had over recent years, with reductions in manning levels, early retirement of experienced staff, and pressure on operating budgets. Leading and lagging performance indicators should be set for monitoring the effectiveness of ageing plant controls.

LEADING INDICATORS could include a 'cyclic' environment, information that staff responsible for equipment on a day-to-day basis are competent and aware of the tell-tale signs of ageing from plant performance.

LAGGING INDICATORS could include repeated service problems and unplanned shutdowns, leakage, surface damage such as blistering or corrosion, or reductions in plant efficiency or lack of process stability.

THE STABILITY OF THE PROCESS is another indicator. Repeated service problems and unplanned shutdowns all provide useful information. It is unlikely that the plant was designed to do this and there must be a reason that could be age-related for these unplanned events and excursions.

IN ORDER TO ACHIEVE the correct business and technical indicators to be able to take a life extension project forward consideration will be necessary on the following subjects, the list is not exhausted but you can see that considerable effort is required and should be in place in normal operation prior to even considering life extension.

- Plant and Equipment Change Management
- Managing the Integrity of Plant and Equipment
- Changes to the Integrity Management System
- Resources
- Awareness of Ageing
- Out-of-date or Obsolete Plant and Equipment
- Monitoring the Condition of Plant and Equipment
- Feedback, Review and Continuous Improvement

THE BUSINESS CHALLENGE

- Collect the right information sets to ensure continuous licence to operate
- Have the correct lead and lag indicators that will allow business change to happen
- Major changes – field development, production capacity increase, tieback of subsea wells etc. – are carried out to national regulations

WHAT IS OFFSHORE PLATFORM RE-CERTIFICATION & LIFE EXTENSION?

Certification of an offshore platform is based on the initial design and construction appraisal, the construction phase and this includes periodical follow-up surveys.

The new add energy initiative can deliver the necessary process, documentation, structure, maintain records of design and fabrication documents, as well as the modelling capability to support our client's future desire to extend the asset life.

Identify critical parts. recertification along installation design lifetime, based upon major periodic surveys, are ensured through a very smooth asset verification re-certification process.

Any re-appraisal will take into account the actual condition of structure and, during the analysis phase, also Calculation methods that are more scientifically advanced than those used during the initial certification.

WHAT ARE THE KEY BENEFITS?

Whether re-certifications are issued after a major modification, or to extend an offshore platform's usage according to statutory requirements, they provide:

- A new or continued License to Operate
- Reduction in amount of repairs and reinforcements
- Confidence for the operator, regulatory agencies and surrounding communities that the platform is safe and reliable

*RIDDOR: Means the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations. It requires the reporting of work-related accidents, diseases and dangerous occurrences. The Act came into force on 01 April 1996

**MARS: Data that provides more detailed and comprehensive insight into the incidents and causal factors and is specifically related to potential major accident hazard events

A game changer for the oil industry

The BP Deepwater Horizon/Macondo blowout in the Gulf of Mexico in 2010 was a game changer for the oil industry on several levels. A fear for and an actual real step back for the deep-water activity, a definitive increased focus on safety awareness, increased understanding of risk involved in drilling operations, one of the largest oil spills in history, significant loss of confidence in the industry and changes in the regulatory regimes.



Text: Dr. Ole B. Rygg
Managing Director
add wellflow

ON THE LAST ISSUE, regulatory changes, the discussions have been on a global scale as well as locally on specific needs and environmentally dependent requirements in each of the countries with a significant offshore activity. The global regulatory changes will not imply that we are heading towards a unified regulatory regime applicable to activities in all countries, but we observe an increased interest in cooperation between regulatory bodies world-wide.

AS A DIRECT CONSEQUENCE of the Macondo incident, the US regulator body for the offshore operations in the Gulf of Mexico, Minerals Management Service (MMS) was split in three distinct organizations:

- Office of Natural Resources Revenue (ONRR)
- Bureau of Ocean Energy Management (BOEM)
- Bureau of Safety and Environmental Enforcement (BSEE)

THE FIRST REGULATORY CHANGES in US waters came in June 2010, even before the flow from the spill was successfully stopped, through an additional guidance to operators. This so called Notice to Lessees, NTL-06, states that oil spill response plans must include a well specific blowout and worst case discharge scenario – and operators must provide the assumptions and calculations behind these scenarios. This was followed in November 2010 by NTL-10, requiring each operator to demonstrate that it has access to, and can deploy, subsea containment resources that could promptly respond to a deep-water blowout or other loss of well control. The discussions on the regulatory regime continue, but there is no doubt that preparedness and contingency planning is a central element in the strengthening of the regulations.

The Macondo/Deepwater Horizon Blowout

- An oil Blowout in the Gulf of Mexico following a loss of control on a deep-water well on the Macondo prospect operated by BP
- The well was drilled with the drilling rig Deepwater Horizon owned by Transocean
- Control of the well was lost on 20 April 2010 resulting in oil and gas flowing onto the rig and a fire and explosion followed
- The fire lasted for 36 hours until the rig sank
- The incident killed 11 men and injured 17 others
- Hydrocarbons continued to flow into the GOM for 87 days
- The well was shut-in at the seabed on 15 July 2010
- Hydrocarbons were bullheaded back into the reservoir and the well cemented in August 2010
- The final confirmation of the well kill was done by a relief well intersect on September 16, 2010



▲ Support vessels try to extinguish flames on the Deepwater Horizon.
Photo: Rigzone

THE OFFSHORE DRILLING in the UK is regulated by the Health & Safety Executive (HSE) and the Department of Energy and Climate Change (DECC). Both regulatory bodies have reviewed the regime and have made changes or strengthened the procedures. The HSE has reinforced the rules and procedures by:

- Increasing levels of peer review of well design and assessments and auditing of safety cases
- Introducing well control assessment for all MODU offshore inspections
- Creating a Deepwater Horizon Advisory Group focused on monitoring the outcomes from investigations into both the Macondo and Montara disasters

Likewise, DECC has strengthened the environmental regime by:

- Increasing the number of MODU environmental inspections
- Increasing the number of joint HSE/DECC inspections
- Enhancing requirements for Oil Pollution Emergency Plans, whereby operators must
 - Be able to respond to a worst case scenario of a potential well blowout that cannot be controlled from the rig itself, requiring drilling of a relief well
 - Ensure proper systems, procedures and resources are established to activate a response to any pollution incident. This includes developing procedures for locating a relief well rig



▲ Montara rig and platform on fire

THE NORWEGIAN PETROLEUM SAFETY AUTHORITY (PSA) has followed the findings from the Deepwater Horizon blowout closely and made their own internal investigation. "An overall lesson from the tragedy is that neither the petroleum industry nor the government can be satisfied with the present position in Norway," commented Øyvind Tuntland, director of professional competence at the PSA, on a seminar in September 2011. The seminar was held to present and discuss the findings from the investigation and recommendations for improvement in Norwegian waters.

EVEN THOUGH THE NORWEGIAN regulations have been looked upon as strict in the industry at large they are undergoing thorough scrutiny to reveal any required changes and improvements. The main topics that PSA will continue to focus on are:

- **Barrier management**
- **Risk management**
- **Organization and management**
- **Regulations and standardization**
- **Capping and containment**
- **Blowout Preventers**

The review of the activity regulations is ongoing while the work to update the NORSOK standard, which the Norwegian regulation is based on, has already been started.

AFTER THE MONTARA BLOWOUT in the Timor Sea in 2009, the Australian Minister for Resources and Energy announced a Commission of inquiry into the uncontrolled release of oil and gas. The report with their findings and recommendations was released 24 November 2010. The work to update the Australian regulations is still underway, but there is no doubt that the result will be an increased focus on preparedness and contingency planning.

FOR TWO DECADES, add wellflow has been delivering contingency plans to the oil industry focusing on worst case scenarios, intervention options and relief well drilling. As clearly demonstrated, the Macondo incident has been a game changer in the whole oil industry and in our niche of the market in particular. This has strongly increased the interest for our core product, blowout contingency planning, but also made people aware of our advisory role when the operators experience well control related problems. The direct involvement in the planning and killing of the Montara incident in Australia and the key competence work supplied to BP in both the investigation efforts and planning the kill of the Macondo blowout have made this apparent.

THE ADD WELLFLOW team will continue to serve the operators, the regulator bodies and the whole oil industry with unique competence and experience within the field of well control and risk management. In doing so we will continue to expand the business in both the US market via the Houston office and in the South-East Asia market through add energy offices in Perth and Singapore. æ

The Montara/West Atlas Blowout

- A gas condensate blowout in the Timor Sea on 21 August 2009, following a loss of control on a wellhead platform while preparing to drill with the West Atlas jack-up drilling rig
- The well located in Australian waters was operated by the National Petroleum Exploration and Production Company, PTTEP
- Sixty-nine workers were evacuated when the blowout occurred. No injuries
- The wellhead platform continued to flow gas and condensate until 03 November 2009 resulting in a total of 74 days of flow
- The blowout was stopped following a successful relief well intersection of the blowing well and then by pumping mud into the well at high rate
- The wellbore was later plugged and cemented

Lessons from Macondo: Revision of the NORsOK D-010

The importance of well integrity and dual barriers are likely to be some of the key elements of the current revision of NORsOK D-010.

Text: Elisabeth Rognved
Freelance journalist

Terje Løkke-Sørensen, Managing Director of add consulting, is currently coordinating the newest revision of the NORsOK D-010 on behalf of the Norwegian Oil Industry Association (OLF). A team of 16 experienced engineers specialising in drilling and well technology will evaluate and edit comments from industry professionals. The result will be the 4th revision of the standard for well integrity in drilling operations. The new revision is expected to be issued by mid-2012.

NEW RECOMMENDED PRACTICES

A comprehensive revision of NORsOK D-010 was undertaken in 2003/2004. The standard was re-organised with new content, structure and terminology.

"The standard is considered for revision every five years. In that respect it is natural to undertake the new revision now. This revision will not be as extensive as the 3rd revision. However, the OLF has pointed to a number of new recommended practices that need to be addressed in the current revision, following the incident in the Mexico Gulf," says Jan Krokeide in OLF.

"If I were to speculate, the verification of the cement in and around the casing will be central elements in this round" adds Terje Løkke-Sørensen.

"LIKE A CHAMPAGNE BOTTLE"

Terje Løkke-Sørensen draws the analogy of the champagne bottle to illustrate the importance of dual barriers for non-engineers.

"The solid glass bottle and the mushroom shaped cork should serve as a sufficient barrier to protect the exclusive content. However, what does one do if the bottle breaks? The valuable Champagne needs to be protected, as well as the environment around it. Picture now that it's not Champagne we're dealing with, but cyanide! When looking at it this way, and transferring the analogy over to oil wells, it becomes clear that there should be a second barrier in place in case of oil leaks" he says.



Terje Løkke-Sørensen ▲
Photo: Elisabeth Rognved

NORSOK Standard

The NORsOK standards are developed by the Norwegian petroleum industry to ensure adequate safety, value adding and cost effectiveness for petroleum industry developments and operations. Furthermore, NORsOK standards are as far as possible intended to replace oil company specifications and serve as references in the authorities' regulations.

ONE YEAR'S WORK

The NORsOK Standards are freely available both in Norway and internationally, and the 16 experts involved in this revision are all working on a voluntary basis. Terje Løkke-Sørensen, who was also coordinating the 2004-revision, has been working together with his team since May 2011.

"Thanks to help from the Norwegian Petroleum Safety Authority (PSA) and OLF we have been able to request feedback and comments from operators and oil and gas service companies. An easy-to-use website has been established for this purpose, and to this date we have received more than 2000 comments. The group of experts will evaluate the comments, and, following an industrial hearing, we expect that the final revision will be available by Spring 2012" Terje Løkke-Sørensen explains.

IMPROVED SAFETY

In sum, Terje Løkke-Sørensen expects that the 2012 D-010 Standard will have a significant impact on the future planning and execution of wells.

"However, a standard in itself is no guarantee that incidents will not occur. Equally important to having all the standards in the world, is to ensure people use, and realise the importance, of learning to use and follow guidelines. This is, perhaps, the real challenge" concludes Terje Løkke-Sørensen. æ

NORSOK Standard D-010

The standard defines the minimum functional and performance oriented requirements and guidelines for well design, planning and execution of safe well operations. The focal of the standard is well integrity.
<http://www.standard.no/en/Sectors/Petroleum/NORSOK-Standard-Categories/D-Drilling/D-010/>

NEMS Chemicals®

- The new environmental software for offshore chemicals



Text: Geir Husdal
Vice President
Energy & Environment

THE CHEMS® DATABASE for storage of offshore chemicals' environmental properties has been a cornerstone in the environmental management for operators on the Norwegian Continental Shelf. The database stored environmental property data for offshore chemicals according to the OSPAR* HOCNF** format. The great advantage of CHEMS® was that it was a joint database accessible by all operators that joined the KPD Centre operated by add novatech.

CHEMS® WAS IN OPERATION for 15 years from 1995. But IT technology develops rapidly and a new data system, NEMS Chemicals® has now replaced CHEMS®. NEMS Chemicals® is a web based system with a much larger potential than CHEMS®. It is a chemical management system for the chemical and the offshore industry.

NEMS CHEMICALS® IS A PROFESSIONAL online software tool tailor made for making, controlling and managing HOCNF data sheets. The structure of the system, using a chemical substance library, rationalize the work required for making, updating and maintaining the HOCNF data sheets for chemical products. It is therefore a comprehensive tool for the chemical supply industry. Its sorting and ranking features, combined with the built-in feature for calculating colour banding, makes it an invaluable tool for the supplier when selecting and proposing chemicals to meet governmental and market environmental requirements.

NEMS CHEMICALS® ALSO PROVIDES the supplier with full access control of the document. The owners can grant and remove access to governmental agents as well as clients as required to meet market needs.

BUT NEMS CHEMICALS® IS MUCH more than a tool for chemicals suppliers. It is also the only commercially available software for operating oil companies and governmental authorities for cost efficient ranking and evaluation of chemicals based on environmental properties.

THE SYSTEM IS ALREADY LICENSED by an increasing number of chemical suppliers providing the offshore oil and gas industry with chemicals. In addition 20 oil companies having operations on the Norwegian Continental Shelf as well as the Norwegian Pollution Control Authority (KLIF) have licensed the system. The operators are granted access by the suppliers to the HOCNFs for the chemicals they use and evaluate, while KLIF enforces the overall governmental audit of the chemical use and documentation.

HOCNF IS THE MANDATORY environmental documentation of offshore chemicals in the OSPAR area (North East Atlantic). UK, The Netherlands, Denmark and Norway are therefore the key market area for NEMS Chemicals®. Being the only recognized documentation of offshore chemicals' environmental properties, the HOCNF documentation has also become the predominant documentation of offshore chemicals' environmental properties in areas outside the OSPAR jurisdiction.

NEMS CHEMICALS® IS THE ONLY available software for cost efficient production, update and maintenance of HOCNFs and the most efficient tool for time and cost saving ranking and comparing offshore chemicals according to environmental properties. The software tool has therefore great potentials for all parties involved. The possibility for suppliers of offshore chemicals to interchange data using NEMS Chemicals® may open up new market areas and segments. North America, Brazil and Australia are new areas where the HOCNFs are becoming the recognized format for environmental documentation of chemicals, thereby also an interesting potential market for NEMS Chemicals®. æ

*OSPAR: Oslo and Paris Commission

**HOCNF: Harmonized Offshore Chemicals Notification Format. HOCNF contains ecotoxicological property data of the individual ingredients in the chemical product, including, marine toxicity data, biodegradation properties and bioaccumulation potentials, all resulting from standard testing.



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