

THE MAGAZINE FOR THE UK
OFFSHORE OIL AND GAS INDUSTRY

ISSUE 42 - SUMMER 2018



Resilient and reshaping

How industry is adapting
behaviours across operations
and employee engagement to
emerge fitter for the future

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Regulars

5 News round-up

Includes news on the UK's first National Data Repository; Oil & Gas UK's latest environmental guidelines; updates from the Efficiency Task Force; new standards from LOGIC and OPITO; highlights from our Safety 30 Conference, plus much more.

9 Membership matters

Announcing new members to Oil & Gas UK's Board and ten new companies to our professional network.

18 Dates for your diary

Save the date and book online for Oil & Gas UK's industry-leading events. Here's your chance to network with colleagues and gain valuable knowledge on the sector's hot topics.

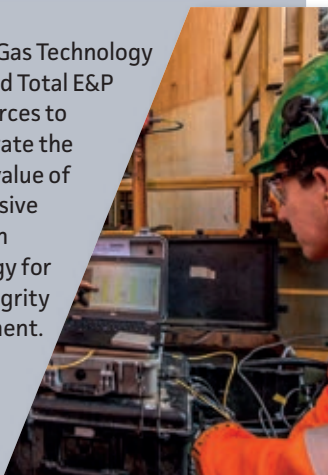
25 A champion for change

Industry's cultural change champion, Steve Phimister of Shell, tells us how he is working with industry leaders to achieve long-lasting behavioural change.



34 Putting technology to the test

The Oil & Gas Technology Centre and Total E&P UK join forces to demonstrate the tangible value of non-intrusive inspection technology for asset integrity management.



20 Shifting tides

Deirdre Michie of Oil & Gas UK reflects on the Safety 30 Conference, the association's priorities, industry's transition to a lower carbon future and the role gas and oil plays in making it a reality.



28 Quay to success

The port authorities at Lerwick and Montrose have invested in significant upgrades to their facilities to ensure they are ready and capable to meet the demands of the oil and gas sector.



39 Health is wealth

Wireline puts the spotlight on wellbeing programmes rolled out by BP and Centrica Storage that look to enhance their employee's mental and physical health.



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It has been a very reflective month as we looked back at what we've learnt since the Piper Alpha disaster 30 years ago. Our annual conference, this year called Safety 30, brought a broad cross section of the industry together, including safety reps, apprentices and many younger people. It put a spotlight on ways in which our businesses and processes have been radically changed (p10) – and we continue to strive towards ensuring safe operations. We now look forward to the Offshore Safety Awards this Summer, where we celebrate and learn from brilliant people making a difference in our industry.

Continuing the theme of change, one year on from being appointed industry's cultural change champion, Steve Phimister of Shell shares some of the work to accelerate

the collaborative culture we want to see across the UK Continental Shelf (UKCS) (p25). The outputs to date strongly align with MER UK, which is always at the forefront of industry's agenda.

In the same vein, we look at how technology is being used to transform how asset integrity is managed on the UKCS (p34). The Oil & Gas Technology Centre and Total E&P UK have successfully completed offshore field trials of non-intrusive inspection technology and the results look promising. If adopted, there is potential to improve safety – with fewer confined space entries – increase production and lower maintenance costs, delivering millions of pounds of savings annually.

As an industry we continue to respond to the changing business climate, with ports such as Lerwick and Montrose showing incredible adaptability and resilience (p28). Both have made significant investments to increase capacity and equip themselves to meet the evolving demands of the industries they serve. One of those demands – as the basin matures – is decommissioning. This is a normal part of a field's life cycle as it reaches the end of its productive life. On the UKCS, the decommissioning market is currently worth almost £2 billion per year and UK supply chain companies are very well equipped to take a large slice of the pie.

As we talk more about new technology and project investment, we must never forget that everything we do is made possible by a strong and healthy workforce – mentally and physically. Hence, we also put the spotlight on two companies that have developed programmes focused on employee wellbeing – programmes that aren't just concerned with physical health, but also individuals' emotional wellbeing (p39). It's great that companies are looking to support their people in this way – it's an important step forward that can benefit us as individuals, companies and the industry as a whole.

Deirdre Michie,
Chief Executive, Oil & Gas UK

Wireline is published by Oil & Gas UK, the voice of the UK oil and gas industry.

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**ISSN 2053-5392 (Print),
ISSN 2053-5406 (Online)**

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OIL&GASUK



1. Business Outlook highlights industry's resilience

Oil & Gas UK's 2018 *Business Outlook* provides the most up-to-date picture of performance and future forecasts for the UK offshore oil and gas industry. The 2018 edition shows that between 12 and 16 oil and gas developments could get the go-ahead this year – unlocking investment of around £5 billion – and the greenfield and major brownfield developments set to be approved could yield more than 450 million barrels of oil and gas. This is good news, though still falls short of the level required to sustain long-term production. Greater exploration success and maximising the potential within existing assets are essential for the future of the industry.

Deirdre Michie, Oil & Gas UK's chief executive, says: "More projects are taking place and investment is happening because of the sweeping changes made to adapt to the challenging business climate. This has helped make the UK Continental Shelf one of the most attractive mature basins in the world in which to do business and we will continue to work hard to maintain our competitive advantage."

Download a copy of the full report and access quick facts and figures at www.oilandgasuk.co.uk/businessoutlook.

And turn to p20 for an interview with Deirdre Michie on the sector outlook, Oil & Gas UK's priorities and Vision 2035.

Key Performance Indicators	2014					2015					2016					2017					2018				
	Y-o-Y % Change	'14	'15	'16	'17	'18	Y-o-Y % Change	'14	'15	'16	'17	'18	Y-o-Y % Change	'14	'15	'16	'17	'18	Y-o-Y % Change	'14	'15	'16	'17	'18	
Total Production (million barrels of oil equivalent)	0%	517	571	598	620-640	+5%	0%	517	571	598	620-640	+5%	0%	517	571	598	620-640	+5%	0%	517	571	598	620-640	+5%	
Liquids Production (million barrels of oil equivalent)	+1%	311	352	371	368	+9%	+1%	311	352	371	368	+9%	+1%	311	352	371	368	+9%	+1%	311	352	371	368	+9%	
Net Gas Production (million barrels of oil equivalent)	+1%	206	220	228	220	+2%	+1%	206	220	228	220	+2%	+1%	206	220	228	220	+2%	+1%	206	220	228	220	+2%	
New Field Approvals	-20%	8	5	2	2	12-16	-20%	8	5	2	2	12-16	-20%	8	5	2	2	12-16	-20%	8	5	2	2	12-16	
Capital Expenditure (£ billion)	+3%	15	11.7	8.3	5.6	5.5-6.0	+3%	15	11.7	8.3	5.6	5.5-6.0	+3%	15	11.7	8.3	5.6	5.5-6.0	+3%	15	11.7	8.3	5.6	5.5-6.0	
Unit Development Costs (\$/barrel of oil equivalent)	-22%	23.8	15.1	12.6	11.8	13-15	-22%	23.8	15.1	12.6	11.8	13-15	-22%	23.8	15.1	12.6	11.8	13-15	-22%	23.8	15.1	12.6	11.8	13-15	
Operating Expenditure (£ billion)	+7%	9.8	8.3	7	7	7-7.5	+7%	9.8	8.3	7	7	7-7.5	+7%	9.8	8.3	7	7	7-7.5	+7%	9.8	8.3	7	7	7-7.5	
Unit Operating Costs (\$/barrel of oil equivalent)	+13%	29.6	21.0	15.2	15.2	15.8	+13%	29.6	21.0	15.2	15.2	15.8	+13%	29.6	21.0	15.2	15.2	15.8	+13%	29.6	21.0	15.2	15.2	15.8	
Decommissioning Spend (£ billion)	0%	1.1	1.1	1.2	1.8	1.7-1.9	0%	1.1	1.1	1.2	1.8	1.7-1.9	0%	1.1	1.1	1.2	1.8	1.7-1.9	0%	1.1	1.1	1.2	1.8	1.7-1.9	
New Field Start-Ups	+8%	4	8	9	12	4-6	+8%	4	8	9	12	4-6	+8%	4	8	9	12	4-6	+8%	4	8	9	12	4-6	
Exploration Well Count*	-13%	13	13	14	14	10-12	-13%	13	13	14	14	10-12	-13%	13	13	14	14	10-12	-13%	13	13	14	14	10-12	
Appraisal Well Count*	-38%	18	13	8	9	7-10	-38%	18	13	8	9	7-10	-38%	18	13	8	9	7-10	-38%	18	13	8	9	7-10	
Development Well Count*	+5%	126	129	88	71	70-80	+5%	126	129	88	71	70-80	+5%	126	129	88	71	70-80	+5%	126	129	88	71	70-80	
Supply Chain Revenues (£ billion)	+4%	40.9	35.7	30.2	27.4	25-30	+4%	40.9	35.7	30.2	27.4	25-30	+4%	40.9	35.7	30.2	27.4	25-30	+4%	40.9	35.7	30.2	27.4	25-30	
Brent Oil Price (\$/barrel)	0%	99	52.5	43.7	54.2	55-65	0%	99	52.5	43.7	54.2	55-65	0%	99	52.5	43.7	54.2	55-65	0%	99	52.5	43.7	54.2	55-65	
National Balancing Point Day-Ahead Gas Price (pence/therm)	-30%	50	42.6	34.6	45	40-50	-30%	50	42.6	34.6	45	40-50	-30%	50	42.6	34.6	45	40-50	-30%	50	42.6	34.6	45	40-50	

2. Updated safety standards for offshore workers' training

The revised OPITO BOSIET/FOET safety standard for offshore workers, which incorporates shallow in-water training with the Category A compressed air emergency breathing system (Cat-A EBS), is live and FAQs have been developed to answer any questions. From now on, personnel must have an offshore medical and a fitness to train certificate to participate. The standard took two years to develop, led by an Oil & Gas UK technical work group. It involved several studies as well as detailed discussion and engagement with the regulator, training providers and occupational health specialists.

Access the FAQs at www.oilandgasuk.co.uk/hse-initiatives and for more information contact Katherine Meffen on kmeffen@oilandgasuk.co.uk.



3. *Guidance on offshore fire and explosion design*

Fire and Explosion Guidance Issue 2 2018 is an important tool in efforts to reduce the risk to life, the environment and the integrity of offshore facilities exposed to fire and explosion hazards. The document builds on guidance originally published in 2007 and provides a technical foundation to support design decisions, as well as guidance on practices and methods that lead to the effective assessment and management of such hazards.

Oil & Gas UK's health and safety manager, Trevor Stapleton, says: "We would like to thank the experts involved in this process, whose significant effort ensures that the guidance reflects current good practice and remains a solid technical reference for the understanding and management of fire and explosion hazards throughout the life cycle of offshore installations on the UK Continental Shelf."

You can access the updated guidance at <http://bit.ly/FEGuidance18>.



4. *Renewed guidelines for industry's emergency preparedness and response plans*

Oil & Gas UK has published *Liability Provision Guidelines for Offshore Petroleum Operations* to help licensees demonstrate that they can cover their costs for control, response and compensation for any unintended and uncontrolled release of hydrocarbons that might result from their activities. The guidelines cover exploration, appraisal and production assets and aim to simplify the process and increase transparency for operators. Previously, each operator was responsible for carrying out their own modelling using a formula to calculate their liability.

Louise O'Hara Murray, Oil & Gas UK's environment manager says: "Using the latest 3D modelling techniques, we have modelled theoretical hydrocarbon releases using eight locations on the UK Continental Shelf under different conditions for a range of release volumes. This helps us more accurately identify the level of financial provision that licensees must have in place should an oil release occur."

Download your copy at <http://bit.ly/LPGuidelines18>.



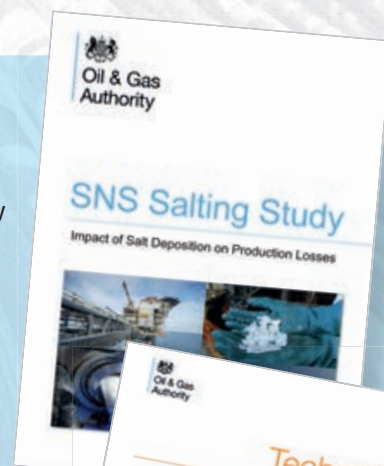
5. *OGA shares knowledge on technical solutions for MER UK*

The Oil and Gas Authority (OGA) has published two reports highlighting the ongoing industry work on critical technologies to Maximise Economic Recovery from the UK Continental Shelf (MER UK).

UKCS Technology Insights is based on the technology plans submitted to the OGA by more than 60 UKCS operators as part of last year's *Stewardship Survey* and gives an insight into companies' technology portfolios and strategies to access further required technologies for MER UK. The comparison showed that many existing technologies could be more widely adopted and that more collaboration among operators is possible.

The *SNS Salting Study* found that southern North Sea (SNS) production efficiency is estimated at 64 per cent – the lowest of the UKCS areas – and that at least one fifth of all producing fields are likely to be affected by salt deposition. It recommends that gas operators in the SNS work together to reduce the impact of salting on production losses.

Get your copy of the reports at <http://bit.ly/publicationsOGA>.



ETF
Efficiency Task Force
at a glance

About the Efficiency Task Force
The Efficiency Task Force (ETF) was formed in 2015 and aims to 'seek out, promote and provide access to efficient practice across the oil and gas industry while maintaining safe operations' by:

- Developing tools and guidelines to drive improvements in focus areas
- Promoting and capturing the impact of industry efficiency initiatives, as well as providing access to efficiency tools, lessons learnt and networking opportunities
- Improving outputs by gathering and acting on feedback to maximise impact and improve industry operations

Chair and Steering Group
The ETF is led by a steering group of industry leaders who are committed to driving sustainable change. They:

- Encourage their peers to participate in the ETF
- Lead on focus areas
- Provide pilot and review opportunities for guidelines

"We are in a crucial period for industry as we look to build on our successes and continue to work together to create smarter ways of doing business. We need your support to lock in permanent change which will benefit the next generation."
Phil Simons, Efficiency Task Force Chair

Focus Areas

- Business Processes** – Promote cross-industry collaboration to improve efficiency in **Inventory Management, Procurement, Logistics, Maintenance and Compression Systems** processes
- Standardisation and Simplification** – Develop guidelines and tools to promote the simplification and standardisation of **Subsea Development Projects and Engineered Products**
- Co-operation, Culture and Behaviours** – Lead the cross-industry effort to drive improvements in culture and behaviours, by promoting the **Industry Behaviours Charter**, the **Efficiency Champions Network**, the roll-out of **Efficiency Roadshows** across industry and sharing **Case Studies** on the **Efficiency Hub**

Progress

- 80+** companies engaged in ETF projects
- 200+** efficiency champions, driving change and challenging old habits
- 400+** downloads of ETF guidelines
- Collaboration index score increased from 6.6 in 2016 to **7.1** in 2017
- 9** Efficiency Roadshows held to date, engaging more than **600** employees
- More than **100** case studies on the Efficiency Hub that can help industry to work smarter and become more competitive

Efficiency Hub
The Efficiency Hub is industry's one-stop shop for all things efficiency. It hosts guidelines and tools for companies to use and share, as well as case studies showcasing new ways of working to improve operations and produce significant efficiency gains.

EFFICIENCY HUB

GET INVOLVED | EFFICIENCY HUB | EFFICIENCY TASK FORCE | EFFICIENCY TASK FORCE CURRENT ACTIVITY | KNOWLEDGE SHARE | OTHER INDUSTRY INITIATIVES | PROGRESS | TOOLS

oilandgasuk.co.uk/efficiency

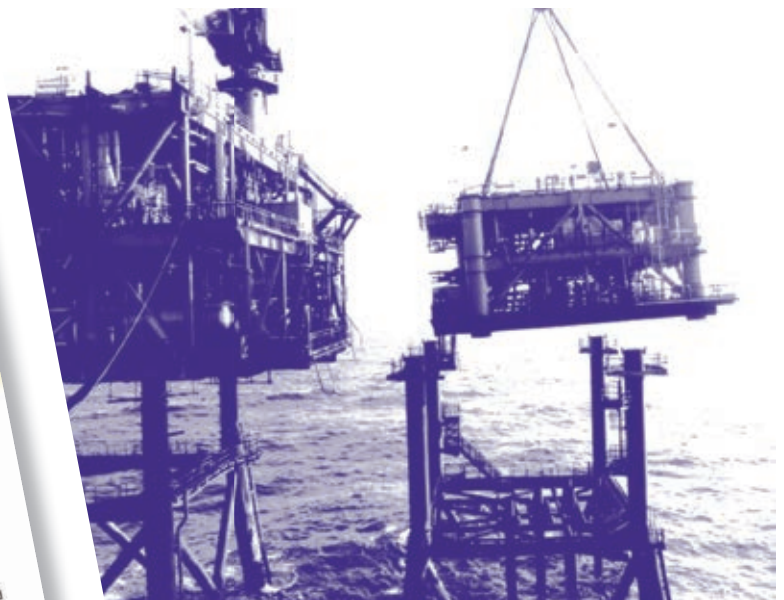
6. ETF at a glance

An easy-to-use visual aid that outlines the Efficiency Task Force's (ETF) achievements to date is being rolled out. The booklet – *Efficiency Task Force at a Glance* – also highlights ways to get involved with its future projects, the champions network and roadshows.

Roadshows offer an opportunity to share information about the ETF's initiatives and the tools available to use, as well as encourage attendees to explore areas where they might work more efficiently and identify internal projects that are shining examples of smarter ways of working. Oil & Gas UK works closely with each company so that the event is tailored to support delivery of its own continuous improvement programme.

Five roadshows have been held so far this year. If you would like to host your own roadshow contact the Efficiency Team on efficiency@oilandgasuk.co.uk.

Download your copy of the ETF at a Glance booklet at <https://cld.bz/u2Vv41r>.



7. Strong support for UK's first National Data Repository

The Oil and Gas Authority (OGA) has received strong industry backing to create the UK's first oil and gas National Data Repository (NDR). The NDR will be launched in early 2019 and will initially build on Common Data Access Limited's (CDA) existing UKOilandGasData platform. To deliver the initial phase, the OGA will enter into a two-year contract with CDA for the provision of NDR services.

Malcolm Fleming, chief executive of CDA, says: "The effective collection and availability of well, seismic and other petroleum-related information is crucial to unlocking the significant remaining hydrocarbon potential of the UKCS. The UK NDR will play a central role in this and is a natural and very positive development for UKOilandGasData and for CDA. We are pleased that the necessary funding and regulatory mechanisms are being put in place for its sustainable future."

8. Industry collaborates to reduce complexity in commercial processes

LOGIC (Leading Oil & Gas Industry Competitiveness), a subsidiary of Oil & Gas UK, has released updated guidance to help companies reduce the commercial complexities of contracts relating to purchasing goods used offshore. The revised document builds on industry's established collaborative approach to standardising legal contracts and is a significant step towards improving the efficiency of commercial transactions in the basin.



Graham Elgie, LOGIC's managing director, adds: "This *Standard Contract* is one of a suite of ten that LOGIC has developed to help companies work co-operatively towards commercial agreements in a timely and effective manner. LOGIC regularly revises these documents to ensure they promote current good practice and this *Standard Contract* incorporates changes that reflect the industry's obligations associated with the MER UK Strategy."

LOGIC's templates for contract negotiations are valued by legal and industry professionals, with over 25,000 downloads recorded to date. Access the revised Standard Contract at <http://bit.ly/LOGICsc>.



9. Annual parliamentary reception to promote industry

More than 100 industry leaders, parliamentarians and senior civil servants gathered at the House of Commons on 21 March for the British Offshore Oil and Gas Industry All Party Parliamentary Group (APPG) annual reception, hosted by APPG chair Peter Aldous MP (bottom right). Rt. Hon Claire Perry MP Minister for Energy and Clean Growth (top left), gave the keynote speech and reiterated the government's continued support for industry.

Oil & Gas UK's chief executive, Deirdre Michie spoke of the industry's mood of "determined optimism", both in the short-term and for the role oil and gas will continue to play in the UK's energy mix for the foreseeable future.

Launched in April 1999, the APPG seeks to provide a dedicated parliamentary focus for issues relating to and impacting on the British offshore oil and gas industry and the hundreds of thousands of jobs that depend on the sector.



10. Improving contracting strategies with the supply chain

The Oil and Gas Authority (OGA) has introduced Supply Chain Action Plans (SCAPs), to help operators show that the strategies and concepts for their contracts are comprehensive and well positioned to get maximum value from project activity. As of April 2018, SCAPs became mandatory for all new green and brownfield projects. They should also be included in all future field development plans or decommissioning programmes. At the end of the year, the OGA will gather feedback from industry to refine the process.

Guidance on the Supply Chain Action Plans are available at <http://bit.ly/OGAscaps>.

11. Industry outlook shared with Bank of England

Business leaders from the UK oil and gas sector shared industry insights with Andy Haldane, chief economist at the Bank of England, at a roundtable meeting in Aberdeen earlier this year. Deirdre Michie, Oil & Gas UK's chief executive, hosted proceedings, which gave the sector an opportunity to share the recent business experiences and outlook for the industry.



Andy Haldane of the Bank of England and Deirdre Michie of Oil & Gas UK

Membership Matters

12. New board members bring further expertise to Oil & Gas UK

Oil & Gas UK is pleased to announce five appointments to its Board, bringing further expertise in oilfield services, drilling and exploration activities. David Clark, Aker Solution's executive vice president (services), will represent major contractor companies supplying services and products to the global oil and gas industry. Kenny Dey, UK managing director at Archer, will represent the supply chain, and Nick Terrell, managing director for Azinor Catalyst, has been appointed to represent smaller-scale exploration and production companies. Ariel Flores, regional president, BP will represent the operator community and following Elisabeth Proust's retirement, Jean-Luc Guiziou, managing director at Total, will replace her on the Board.



L-R: Ariel Flores of BP; David Clark of Aker Solutions; Jean-Luc Guiziou of Total; Kenny Dey of Archer; and Nick Terrell of Azinor Catalyst

13. Companies join Oil & Gas UK

We are pleased to welcome the following companies to Oil & Gas UK membership: 3T Energy Group; 3 Verulam Buildings; Athens Group; ATPI Limited; Braemar Response Ltd; Cathie Associates; ENSCO; GEXCON; Glasgow Caledonian University; ICR Integrity; Infrastructure Analytics; K & L Gates LLP; Ledingham Chalmers; Maersk Training Aberdeen Ltd; Montrose Port Authority; NetHost Legislation; Offshore Design Engineering Ltd; and Seacraft Marine Consultants.

Find out more about the benefits of membership at www.oilandgasuk.co.uk/membership



14. *Shining a light on safety*

More than 700 people attended the Safety 30 Conference on 5 and 6 June in Aberdeen – marking 30 years since Piper Alpha. The conference held a mirror up to the industry’s current performance and considered how to make further improvements. Lord Cullen, the judge who chaired the public inquiry into the disaster, delivered the keynote address where he reflected on lessons from Piper Alpha as well as other major accidents around the world.

Delegates tailored their conference agenda under the themes of people, plant or process and heard from a variety of leaders on the industry’s relentless focus on safety and need to ensure offshore skills and experience is passed to the next generation. The finale was a session with Steve Rae, a Piper Alpha survivor, Sam Ash, 2017 apprentice of the year, and Jo Reynolds, 2017 graduate of the year, symbolising the handing of the baton from one generation to the next. They challenged everyone to commit to take action in their own workplace following the conference.

Deirdre Michie, chief executive of Oil & Gas UK, comments: “From Lord Cullen opening Safety 30 to Piper Alpha survivor Steve Rae sharing safety reflections with two of industry’s next generation, it has been an engaging and insightful conference. The tragedy of Piper Alpha left a safety legacy that must remain with us – as we have highlighted these last two days – and I sincerely hope that we all now go back to our workplaces better informed, motivated and committed to doing our part to improve process safety across the industry.”

A timeline of events
 Oil & Gas UK launched an animation of the post-Piper timeline that outlines the significant events that followed the 1988 disaster and the changes that have since been made.
Watch the animated timeline at <https://vimeo.com/273507670> and share on social media.



Paul Wheelhouse MSP tours the exhibition hall



Delegates hear from Martin Temple of the HSE



Lord Cullen delivers the keynote speech



Trialling DNV GL's virtual reality technology



Inside BP's virtual reality dome



Panel session with Steve Rae (right), Piper Alpha survivor

1988, 6 July



PIPER ALPHA EXPLOSION, UK

A major leak of gas condensate resulted in an explosion on the production deck of Piper Alpha. This was followed by a number of smaller explosions, which led to large oil fires that spread rapidly to other areas of the platform.

The rupture of the pipelines from other installations produced further explosions and fireballs that engulfed the platform, resulting in the structure collapsing into the sea. 165 of the 226 people on board were killed, as well as two people in the Sandhaven fast rescue craft.



1989, January

INDUSTRY CHAPLAINCY FORMALISED

The need for a chaplain dedicated to the industry had been highlighted in the aftermath of the Chinook helicopter tragedy in Shetland in November 1986. By January 1989, the industry had established its own interdenominational chaplaincy fully funded by the United Kingdom Offshore Operator's Association (UKOOA), now Oil & Gas UK.

The current Chaplain is Reverend Gordon Craig who was appointed in August 2012 following 24 years as an RAF chaplain.



1989, April

CORMORANT ALPHA PLATFORM EXPLOSION, UK

During the replacement of a leaking Emergency Shutdown (ESD) valve on the export gas riser, workers became alarmed that the inflatable plug had started to move up the line towards them. Eventually the plug came out of the line causing a major gas leak. The crew mustered and the platform was shut down until the gas dispersed. However, when the emergency power came back on, a spark ignited gas causing explosions and flash fires around the platform. Fortunately there were no casualties, but there was extensive damage to the platform.

1988, 22 September

OCEAN ODYSSEY DRILLING RIG GAS BLOWOUT, UK

During the drilling of the high pressure/high temperature 22/30b-3 well, a blowout occurred due to the failure of a subsea wellhead. The radio operator was killed during the fire.



1988, 11 November

PIPER ALPHA PUBLIC INQUIRY COMMENCED

The Rt Hon Lord Cullen was appointed to hold a public inquiry to establish the cause of the accident on Piper Alpha. The inquiry started with a preliminary hearing in Aberdeen on 11 November 1988 and Lord Cullen's report was presented to the Secretary of State on 19 October 1990. The report identified 106 recommendations to preserve life and avoid similar accidents in the future.

1988, December OFFSHORE INDUSTRY LIAISON COMMITTEE (OILC) FORMED

The OILC is a group of offshore workers that campaign for improvements to offshore health and safety and conditions of employment.



1989, 6 July

OILC'S BLOWOUT MAGAZINE PUBLISHED

The OILC produced their first ever edition of Blowout – a journal described as the 'voice of the offshore workforce' featuring opinion pieces, offshore articles and photos. It is still produced today.



1989, 18 September

THE OFFSHORE INSTALLATIONS (SAFETY REPRESENTATIVES AND SAFETY COMMITTEES) REGULATIONS 1989

The Regulations allow members of the offshore installation workforce to elect safety representatives and for a safety committee to be formed on the installation. The Regulations aim to ensure that the whole workforce is formally involved in promoting health and safety.

1992

HSE HYDROCARBON RELEASE DATABASE LAUNCHED

The Hydrocarbon Releases (HCR) database was set up in response to a recommendation in the Piper Alpha inquiry report. The system contains detailed voluntary information from 1 October 1992 on offshore hydrocarbon release incidents supplementary to that provided under RIDDOR (and previous offshore legislation prior to April 1996). The data contained in the HCR system database is owned by the duty holders, however the HSE manages the system.



1992, March

OFFSHORE SAFETY ACT 1992

The Offshore Safety Act 1992 came into force, ensuring the Mineral Workings (Offshore Installations) Act 1971, and other offshore Regulations made under that Act, were included as an existing statutory provision of the Health and Safety at Work etc Act 1974.

1991

HSE OFFSHORE SAFETY DIVISION ESTABLISHED

Following a recommendation in Lord Cullen's inquiry into Piper Alpha, offshore safety responsibilities were transferred from the Department of Energy to the Health and Safety Executive (HSE). As part of the HSE, the new Offshore Safety Division's task was to ensure that Lord Cullen's 106 recommendations were fully implemented.



1990, 25 July

G-BEWL FATAL CRASH, BRENT SPAR, UK

While the helicopter was manoeuvring to land on the Brent Spar installation, the tail rotor struck the anemometer mast attached to the crane 'A' frame. The aircraft crashed onto the helideck and almost immediately fell into the sea. Seven occupants were rescued and there were six fatalities, including the crew.

1993, 1 January

'SIX PACK' REGULATIONS INTRODUCED

The group of six separate health and safety Regulations, commonly known as 'the six pack', implement EU Directives and include:

- The Management of Health and Safety at Work Regulations
- The Display Screen Equipment Regulations
- The Manual Handling Operations Regulations
- The Personal Protective Equipment at Work Regulations
- The Provision and Use of Work Equipment Regulations
- The Workplace Health, Safety and Welfare Regulations (not applied offshore as equivalent requirements were already in existence)

1992, 14 March

G-TIGH FATAL CRASH, CORMORANT ALPHA, UK

While transporting personnel from the Cormorant Alpha platform to the nearby flotel at night, extreme weather conditions and pilot error contributed to the aircraft crashing into the sea shortly after take-off. Of the two crew and 15 passengers, there were 11 fatalities.



1991, July

PIPER ALPHA ABERDEEN MEMORIAL DEDICATED

A memorial sculpture, showing three oil workers, was erected in the Rose Garden within Hazlehead Park in Aberdeen. A memorial window can be seen in Kirk of St Nicholas, Aberdeen. Strathclyde Park, Glasgow, also has a memorial stone to mark the disaster.



1990, November

CULLEN INQUIRY REPORT PUBLISHED

All 106 recommendations in the report for changes to North Sea safety arrangements and procedures were accepted by industry, government and trade unions. The key recommendations were: the transfer of responsibility for safety oversight to the Health and Safety Executive; the establishment of the Safety Case Regulations; a thorough review of existing safety legislation and the move towards a goal-setting regulatory regime.



1993, May

OFFSHORE INSTALLATIONS (SAFETY CASE) REGULATIONS 1992 [SCR]

The Regulations aim to reduce the risks from major accident hazards to the health and safety of the workforce employed on offshore installations or in connected activities.

1994

OFFSHORE HELIDECK OPERATIONS GUIDELINES ISSUED

1995

EMERGENCY PREPAREDNESS OFFSHORE LIAISON (EPOL) GROUP ESTABLISHED

EPOL Group is an industry-led forum supported by Grampian Police (now Police Scotland), the Maritime and Coastguard Agency and UKOOA (now Oil & Gas UK), which seeks to improve offshore emergency response related issues in the northern UK Continental Shelf and west of Shetland.



1995

OFFSHORE EMERGENCY TRAINING GUIDELINES

Latest version February 2010.



1995, April

EMERGENCY RESPONSE GUIDELINES

Latest version June 2010.



1995, May

FIRE AND EXPLOSION GUIDELINES



1995, 20 June

OFFSHORE INSTALLATIONS AND PIPELINES WORKS (MANAGEMENT AND ADMINISTRATION) REGULATIONS 1995



1996, 1 April

REPORTING OF INJURIES, DISEASES AND DANGEROUS OCCURRENCES REGULATIONS 1995 [RIDDER]



2006, 27 December G-BLUN FATAL CRASH, MORECAMBE BAY, UK

When preparing to land on the platform in the dark, the helicopter flew past the platform and struck the surface of the sea. The fuselage disintegrated on impact and the majority of the structure sank. Two fast response craft from a multipurpose standby vessel, which was on position close to the platform, arrived at the scene of the accident 16 minutes later. There were no survivors among the five passengers and two crew.



2006, 6 April NEW SAFETY CASE REGULATIONS

The Offshore Installations (Safety Case) Regulations 2005 were brought in to replace the previous regulations published in 1992.



2006 SCIS ASSET INTEGRITY TOOLKIT



2005, 11 December BUNCEFIELD OIL STORAGE TERMINAL FIRE, UK

Liquid fuel spilt from the top of a tank while refuelling when safety systems, designed to prevent overfilling, failed. About 300 tonnes of petrol escaped and a vapour cloud formed, mixing with cold air at combustible concentrations. The first series of explosions caused a huge fire that engulfed 20 large storage tanks. The fire burned for five days; hundreds of homes and businesses were evacuated while the blaze was tackled.



2004 KP3 (ASSET INTEGRITY) INSPECTION PROGRAMME LAUNCHED



2004

KP1 REPORT PUBLISHED

It reports on hydrocarbon releases during the Programme and contains data analysis of the incidents. It also highlighted problem areas that have led to HCRs.



2006, February ROUGH PLATFORM FIRE, UK

Gas released from one of Rough's process modules, due to catastrophic failure of a heat exchanger, resulted in an explosion and fire in the jacket. The ESD and fire deluge systems operated as expected and the platform facilities were shut down in a controlled manner. Following failure of power generation, the decisions were taken to suspend the 24 hour manning of 3B platform. There were no casualties during this incident.



2007, April

OIL & GAS UK FORMED

Oil & Gas UK was formed on the foundations of the UK Offshore Operators Association (UKOOA). Oil & Gas UK's aim is to strengthen the long-term health of the offshore oil and gas industry in the UK by working closely with companies across the sector, governments and all other stakeholders to address the issues that affect the industry.



2007, July

KP2 REPORT PUBLISHED

The report identified that the leading management failure was a lack of effective auditing of the management of deck and drilling lifting operations offshore. Other leading failures were planning and control, and training and competence.



2008, 1 May OILC MERGED WITH RMT



2008, July 20TH ANNIVERSARY OF PIPER ALPHA

The anniversary was marked with memorial ceremonies both onshore and offshore and a number of events. A parliamentary debate was held to remember those who died and discuss continued improvement in offshore safety. A series of videos were produced looking at the lasting impact of the tragedy.



2009

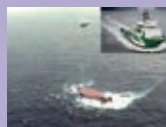
STEP CHANGE IN SAFETY HCR REDUCTION TOOLKIT

Major and significant releases had been consistently reducing until this point. However, the improvement trend slowed and a focused effort was required by industry to ensure lasting leak reduction. The toolkit supersedes the 2002 UKOOA publication.



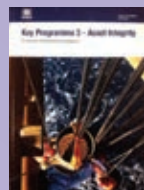
2007, 12 April BOURBON DOLPHIN VESSEL CAPSIZE, SHETLAND

The Bourbon Dolphin anchor handling vessel capsized off the coast of Shetland and sank three days later. Eight of the 15 people on board were killed. Industry guidelines on anchor handling operations were revised to reflect lessons learnt from the incident.



2007, 21 November KP3 REPORT PUBLISHED

Inspections covered nearly 100 offshore installations and highlighted areas in maintenance management systems and overall infrastructure conditions that the industry would need to focus on.



2009, January ASSET INTEGRITY KPI LAUNCH

Work began in 2007 to develop key performance indicators in response to HSE's KP3 initiative. By 2009, these were well developed and intended to gauge and monitor evolving industry performance on asset integrity.

1996, 30 June
OFFSHORE INSTALLATIONS AND WELLS (DESIGN AND CONSTRUCTION, ETC.) REGULATIONS 1996 [DCR]



1997, September
STEP CHANGE IN SAFETY (SCIS) FOUNDED
 Step Change in Safety was founded by the UK oil and gas industry trade associations with the initial aim of reducing the UK offshore industry injury rate by 50%. Its current vision is to ensure the UK is the safest place to work in the global oil and gas industry.

1997
SCIS GREEN HAT POLICY
 The policy required new starts to the industry and personnel that were new to an installation to wear a high visibility green/yellow hat. It served to identify and support those who are unfamiliar with the location, ensuring their safety and that of their colleagues.

2000
VANTAGE POB LAUNCHED
 The Vantage Personnel on Board system was developed to improve the tracking of people working offshore and keep records of what training each worker had received and whether it is in date.



2000, 1 April
KP1 (HCR REDUCTION) INSPECTION PROGRAMME LAUNCHED
 This HSE Offshore Safety Division (OSD) inspection – key programme – was launched to investigate all reported offshore hydrocarbon releases. The project formed part of an ongoing OSD initiative aimed at reducing the number of 'major' and 'significant' releases by 50% by April 2004.



2003, September
BRENT BRAVO FATAL ACCIDENT, UK
 There was a release of liquid hydrocarbons from a temporary repair on the closed drain degasser rundown line. The liquid evaporated forming vapour in the utility shaft, killing two men due to vapour inhalation. The accident raised the profile of major hazard management and asset integrity within the UK offshore oil and gas industry.



2003
KP2 (DECK AND DRILLING OPERATIONS SAFETY) INSPECTION PROGRAMME LAUNCHED



2003
SCIS FATALITY REVIEW REPORT PUBLISHED
 Following 11 fatalities in the UK, Norway and Holland between 2000-2002 on drilling operations, Step Change in Safety established a review team. The report provides an overview of each fatality and summarises common learnings.

2002, 16 July
G-BJVX FATAL CRASH, LEMAN, UK
 While travelling between Clipper and Global Santa Fe Monarch, the drilling rig attached to Leman Foxtrot, the aircraft suffered a catastrophic failure of a main rotor blade. The aircraft fell into the sea leaving no survivors of the nine passengers and two crew who were on board.

2002
HCR REDUCTION TOOLKIT LAUNCHED
 Developed by UKOOA in response to HSE KP1 inspection programme to provide advice and guidance on the prevention, management and control of hydrocarbon releases.

2001, 15 March
PETROBRAS 36 PLATFORM EXPLOSION, BRAZIL
 Following two explosions caused by over pressure and ignition of leaking hydrocarbon vapour, two workers were killed immediately and nine others were trapped in a submerged compartment; they were later presumed dead. Despite efforts to save the platform by pumping in nitrogen and pumping out water, the structure slowly sank five days later.



2001
SADIE LAUNCHED
 Step Change in Safety's Safety Alert Database and Information Exchange (SADIE), is intended to facilitate the sharing of safety information and improve the lateral learning across the industry.

2009, 1 April
G-REDL FATAL ACCIDENT, MILLER, UK
 Fifty minutes into a return flight to Aberdeen, there was a catastrophic failure of the helicopter's main rotor gearbox and rotor head separation occurred. The aircraft crashed into the sea killing 14 passengers and two crew.



2009, April
HELICOPTER TASK GROUP FORMED
 The Helicopter Task Group (HTG) was created to address cross-industry issues around helicopter safety, including those arising from the fatal helicopter crash on 1 April 2009.



2009, 1 April
MINIMUM INDUSTRY SAFETY TRAINING (MIST) LAUNCHED
 Step Change in Safety, in collaboration with OPITO - The Oil & Gas Academy created a new minimum industry safety training (MIST) standard for the UK offshore workforce.



2010, Q1
PERSONAL LOCATOR BEACONS REINTRODUCED TO NORTH SEA
 Personal locator beacons were removed from use following the ETAP helicopter ditching when concerns were raised regarding their interference with avionics. Thorough testing was subsequently carried out and improved devices, approved by CAA, were reintroduced for universal use.

2010, January
ERSKINE PLATFORM FIRE, UK
 The installation's monitoring system signalled a fire on the platform and as a result, a full shutdown and a depressurisation of facilities was initiated from the nearby Lomond platform. Corrosion of a clamp ring connecting pipework to a wellhead caused a hydrocarbon release that led to the fire. This was an unmanned platform, therefore there were no casualties.

2010, 20 April
DEEPWATER HORIZON/MACONDO EXPLOSION, GULF OF MEXICO
 During drilling activity, highly flammable methane gas escaped from the well and drill column causing an explosion and subsequent fire that engulfed the platform. After burning for more than a day, Deepwater Horizon sank. Of the 127 workers on the platform 11 were killed and 16 injured. This incident was considered the world's largest accidental marine oil spill with current estimates of 4.9 million barrels of oil released.



2010, May

OIL SPILL PREVENTION AND RESPONSE ADVISORY GROUP (OSPRAG) FORMED

Oil & Gas UK established OSPRAG to provide a focal point for the review of industry practices in the UK, in advance of the conclusion of investigations into the Gulf of Mexico incident. This collaborative effort involved representatives from industry, regulators and trade unions. The OSPRAG report was published in 2011. A well capping device was developed to enhance the UK's capability to respond to a major, sustained release of oil by closing off the well should a major well control incident occur.



2010, July

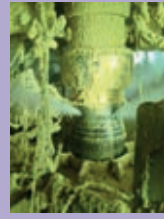
KP4 (AGEING & LIFE EXTENSION) INSPECTION PROGRAMME LAUNCHED



2012, 25 March

ELGIN G4 GAS LEAK, UK

A gas leak, believed to have been caused by failure of the C annulus, occurred within the well during plugging and decommissioning. All non-essential personnel were evacuated. The leak was successfully stopped on 16 May 2012.



2012, April

OIL & GAS UK GUIDANCE ON THE CONDUCT AND MANAGEMENT OF OPERATIONAL RISK ASSESSMENT FOR UKCS OFFSHORE OIL AND GAS OPERATIONS GUIDELINES



2016, 27 January

OIL & GAS UK GUIDANCE ON AGEING AND LIFE EXTENSION OF SUBSEA PIPELINES AND RISERS



2015, 17 December

OIL & GAS UK SUPPLEMENTARY GUIDANCE ON THE REPORTING OF HYDROCARBON RELEASES (HCR) – ISSUE 3



2015, April

HELICOPTER PASSENGER SIZE RESTRICTIONS

The CAA imposed restrictions on passengers on offshore flights whose body size, including essential safety and survival equipment, was incompatible with the nearest escape exit. A major exercise to measure offshore passengers was undertaken with helicopter seating arrangements adopted to accommodate personnel classified as extra broad (XBR).



2016, January

APPROVED CODE OF PRACTICE L154 – OFFSHORE SAFETY CASE REGULATIONS 2015

2015, 19 July

OFFSHORE INSTALLATIONS (OFFSHORE SAFETY DIRECTIVE) (SAFETY CASE ETC.) REGULATIONS

2015, 1 March

PIPELINE AND RISER LOSS OF CONTAINMENT 2001-2012 (PARLOC 2012) REPORT

2015, March

HYDROCARBON RELEASE (HCR) PREVENTION – PEER REVIEWS



2016, March

OIL & GAS UK WELL LIFE CYCLE INTEGRITY GUIDELINES



2016, 6 July

SAFE WORKING ESSENTIALS

Step Change in Safety launched the simplification tool – Safe Working Essentials – designed to eliminate unnecessary duplication of systems, ensuring the delivery of safe and efficient safety processes.

2016, 11 August

OIL & GAS UK MAINTENANCE OPTIMISATION REVIEWS – SHARING EXPERIENCE AND LEARNING

Supporting the delivery of safe, sustainable operations and reducing safety-critical maintenance backlog.



2016, 11 August

OIL & GAS UK CUMULATIVE RISK GUIDELINES



2016, October

OIL & GAS UK GUIDELINES FOR HIGH-PRESSURE, HIGH-TEMPERATURE WELLS



2016, April

APPROVED CODE OF PRACTICE L65 – PREVENTION OF FIRE AND EXPLOSIONS, AND EMERGENCY RESPONSE ON OFFSHORE INSTALLATIONS

2016, August

OFFSHORE SAFETY DIRECTIVE – LICENSING AND OPERATORSHIP SAFETY AND ENVIRONMENTAL ASPECTS



2017, March

500 METRE ZONES – JOINED UP THINKING PACK

Step Change in Safety worked with the Marine Safety Forum to produce a Joined-up Thinking pack focusing on 500 metre safety zones. The film used actual collisions or near collisions between vessels and offshore installations to convey the safety message.

2012, October

EC225 HELICOPTERS SUSPENDED

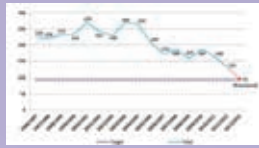
Following ditchings of two EC225 helicopters in 12 months, on 10 May 2012 and 22 October 2012, the use of these aircraft for North Sea operations was suspended, pending root cause investigations by Air Accident Investigation Branch.



2013, 31 March

HYDROCARBON RELEASE REDUCTION TARGET

The industry fell just short of its stated 50% reduction in hydrocarbon releases target, achieving a 48% reduction over the three year period.



2013, May

EU SAFETY DIRECTIVE RATIFIED BY EU PARLIAMENT

2013, 12 June

OFFSHORE SAFETY DIRECTIVE PUBLISHED BY THE EU

2013, 18 June

REMEMBERING PIPER FILM

Step Change in Safety released a 22-minute film based on the evocative artwork of Sue Jane Taylor who was offshore in the months prior to the disaster.



2013, July

JOINED-UP THINKING

Step Change in Safety launched the first series of six Joined-up Thinking learning packs focused on hydrocarbon release prevention. They are designed for use at workplace safety meetings.



2014, September

CATEGORY A EMERGENCY BREATHING SYSTEM (EBS) ADOPTED



2014, June

HUMAN FACTORS TOOLKIT



2014, 16 May

OIL & GAS UK GUIDELINES ON AGEING AND LIFE EXTENSION (ALE) PUBLISHED



2013, 23 August

SUMBURGH HELICOPTER ACCIDENT

A Eurocopter AS332L2 Mk 2 helicopter crashed into the sea near Sumburgh in the Shetland Islands, killing four of the passengers. Twelve passengers and two crew were rescued. The industry advised a 'time out for safety' on all Super Puma aircraft in the days following the accident to allow time to better understand causal factors.

2014, February

CAP 1145 PUBLISHED

As part of the response to the 2013 Sumburgh helicopter crash, the Civil Aviation Authority (CAA) published CAP 1145 – Safety review of offshore public transport helicopter operations in support of the oil and gas industry. The report put forward 32 actions and 29 recommendations to improve helicopter transport safety.

2014, 16 July

OIL & GAS UK GUIDANCE ON RISK RELATED DECISION MAKING



2014, May

KP4 REPORT PUBLISHED

2014, March

OFFSHORE HELICOPTER SAFETY ACTION GROUP (OHSAG) FORMED

2017, August

OIL & GAS UK GUIDELINES ON COMPETENCY FOR WELLS PERSONNEL



2017, 4 September

FLEXIBLE PIPE INTEGRITY MANAGEMENT GUIDANCE AND GOOD PRACTICE



2017, November

STEP CHANGE IN SAFETY COMPETENCE FRAMEWORK – SAFETY CRITICAL TASKS



2018, April

STEP CHANGE IN SAFETY MAJOR ACCIDENT HAZARD AWARENESS PROGRAMME



2017, August

OIL & GAS UK GUIDELINES FOR WELL OPERATORS ON WELL EXAMINATION



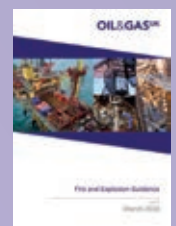
2017, 13 September

GUIDANCE FOR UK SAFETY CASE MANAGEMENT DURING END OF LIFE (EoL), DECOMMISSIONING AND DISMANTLING



2018, 29 March

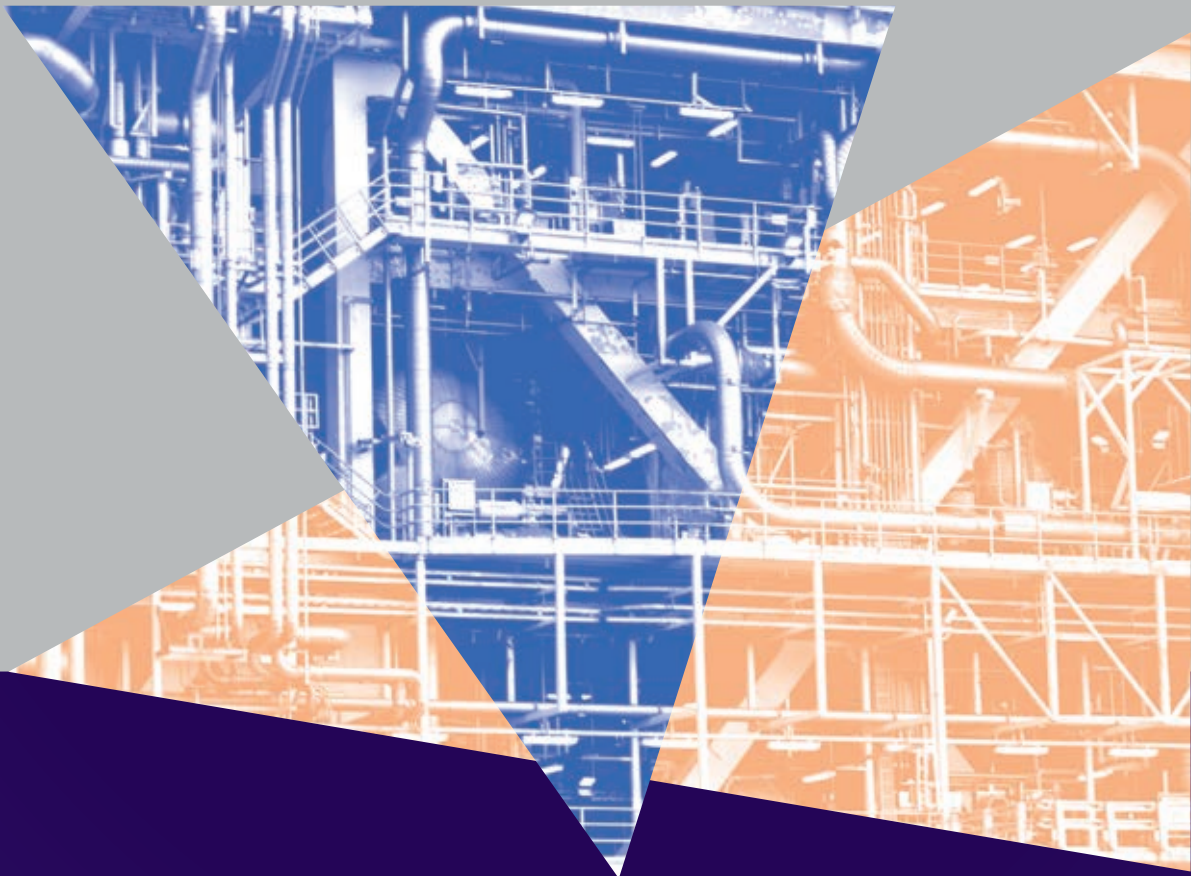
OIL & GAS UK FIRE AND EXPLOSION GUIDANCE



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Safety Valves (CPD Accredited) | *Thursday, 5th July*
Valves Advanced Level | *Monday, 9th ~ 10th July*
PED/ATEX Directives | *Wednesday, 11th July*
Safety Integrity Levels (SILs) | *Thursday, 12th July*

Autumn | 2018

Introduction to Valves | *Monday, 3rd September** To be held at Emerson, Aberdeen
Valves Advanced Level | *Tuesday, 4th September** To be held at Emerson, Aberdeen
Control Valves (CPD Accredited) | *Wednesday, 5th September** To be held at Emerson, Aberdeen
Safety Valves (CPD Accredited) | *Thursday, 6th September** To be held at Emerson, Aberdeen
Casting Design for Valves | *Wednesday, 19th September** To be held at AMRC Casting Facilities, Rotherham
Introduction to Valves | *Monday, 1st October*
Introduction to Valve Actuators | *Tuesday, 2nd October*
Control Valves (CPD Accredited) | *Wednesday, 3rd October*
Safety Valves (CPD Accredited) | *Thursday, 4th October*
Valves Advanced Level | *Monday, 8th~9th October*
Safety Integrity Levels (SILs) | *Wednesday, 10th October*
PED/ATEX Directives | *Thursday, 11th October*
Managing Commercial Risk | *Tuesday, 30th October*

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Aberdeen



11 September 2018
Aberdeen Breakfast Briefing
Economic Report Launch



1 November 2018
Oil & Gas UK Awards
Aberdeen

11 September 2018
London Breakfast Briefing
Economic Report Launch



26-28 November 2018
Offshore Decommissioning Conference
St Andrews

18 September 2018
Aviation Seminar
Aberdeen

4 December 2018

Aberdeen Breakfast Briefing



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Shifting tides

Emerging from one of its toughest downturns, the UK's offshore oil and gas industry is navigating profound issues around its role in a fast-changing world. Deirdre Michie, chief executive of Oil & Gas UK, outlines the association's focus as the sector moves through Brexit and the transition to a low carbon economy amid the relentless pursuit of safe operations.



Q: We're speaking to you shortly after the Safety 30 Conference, which gave special focus to the learnings taken from the Piper Alpha tragedy. Three decades on, how has industry changed?

A: The terrible events that took place that night left an indelible mark on our industry and on the people left behind. We might be a big industry, but we're a small community.

One of the strongest messages that came across loud and clear at Safety 30,

was that there can never be any let up in our pursuit of safe operations.

Lord Cullen – who chaired the public inquiry into Piper Alpha, which led to the root and branch health and safety reform of our industry – spoke in a very insightful and compelling way on what can be learnt from the fundamental reasons for past major accidents, whatever the differences in conditions today or in the future.

It can be easy to almost desensitise yourself to risk when pouring over

a process or reading a report, but relating to and learning from past tragedies is vital.

A growing proportion of our workforce have joined the industry since Piper Alpha, and our conference also considered how we should engage this generation, and the next, in a way that really helps us to keep positively progressing our focus on safe operations, as the culture of the industry develops and as new technology continues to change the way we do things.

UK upstream



deals in 2017 surpassed \$8 billion

Average unit operating costs have halved from around \$30/boe in 2014 to



in 2017

There were at least five exploration successes in 2017 with a combined discovery of



Around



of post-tax cash flow was generated on the UKCS in 2017, more than in any year since 2011

The average share price of supply chain companies active on the UKCS increased by



in 2017

Q: The oil price slump heaped enormous pressure on the sector. Did this have an impact on safe operations?

A: The evidence from across industry shows safe operations were maintained throughout the downturn, but we can never be complacent. There's been a sustained downturn in hydrocarbon releases, the backlog in safety critical maintenance hours has continued to decline since 2014, and the over seven-day injury rate in 2016 was the third lowest since the measure was first calculated. But any incident is one too many.

One of the privileges of my job is seeing how passionate and determined our peers are in working together to drive change. For example, our forums – led by industry for industry – produce some fantastic work in developing good practice guidelines in support of safety and operational improvements.

What the downturn actually helped to reinforce is that productive operations and safe operations go hand in hand. If you look at some of the case studies on our Efficiency Hub there are examples of how companies are deploying new technologies, big data and smarter ways of working. These advances are reducing risk while at the same time benefitting the bottom line.

Safety is a core value for our industry and safe operations remain at the heart of all that we do – regardless of the business climate.

Q: Oil & Gas UK recently published its *Business Outlook report*, which showed more investment is expected in 2018 than the last three years combined.

“

These greenfield and brownfield developments could yield more than 450 million barrels of oil and the activity and investment they will bring is good news for the supply chain

”

Do you feel more positive about the future?

A: I think we can take heart from some of the positive elements that came from our report. For example, between 12 and 16 oil and gas developments could get the go-ahead this year – unlocking investment of around £5 billion.

Industry has worked hard to deliver viable unit operating costs, we've now got a competitive fiscal regime through our work with government, and the multi-billion pounds worth of merger and acquisition activity is a vote of confidence in the UK Continental Shelf (UKCS).

History tells us we must load any positivity with a heavy dose of realism and anticipated risk. We know that there are still key areas of concern, which we must be cognisant of and provide support where we can. The supply chain remains under significant pressure and we also badly need more drilling, exploration and well development to keep that cycle of activity turning into 2020 and beyond.

Q: Could you tell us more about the new developments?

A: There's quite a range – from near field projects tied back to existing infrastructure to completely new ones that will need new infrastructure put in place. Companies are also revisiting old fields – not just developing shiny new ones. Innovative technology is helping the enhanced oil recovery project at Chevron's Captain field and Shell is redeveloping its Penguins oil and gas field. Lower costs have made it an opportunity with a competitive price below \$40 per barrel.

These greenfield and brownfield developments could yield more than 450 million barrels of oil and the activity and investment they will bring is good news for the supply chain.

Q: What is industry doing to support the supply chain through this period?

A: Supply chain resilience is a key priority for Oil & Gas UK. We want to ensure our globally renowned supply chain has the tools, support and guidance to deliver greater >

Just 94 wells (71 development, 14 exploration and 9 appraisal) were spudded on the UKCS in 2017, the fewest since 1973



Development drilling has fallen by around

45%

in just two years

Supply chain revenues have fallen by more than

£10 billion

from 2014-16

Even if all fields discovered last year are developed, the reserves replacement ratio of

0.6

is not enough to sustain production

performance in a marginal business environment. The working example we have of this is our Supply Chain Hub – industry’s gateway to initiatives that aim to promote and maintain a strong and competitive UK oil and gas supply chain.

This is driven by our Supply Chain Forum, which undertakes great work on behalf of industry to understand and support the supply chain, and is enabled by an excellent team led by our new supply chain and HSE director, Matt Abraham.

Our world-class supply chain, anchored in the UK, exports its products and skills across the world. Our intention, through Vision 2035, is to double its share of the global market.

Q: Can you tell us more about Vision 2035?

A: Vision 2035 is our long-term ambition to support a global energy industry, anchored in the UK, powering the nation and exporting to the world. It brings together two key objectives for industry over the next two decades, one being doubling the supply chain’s share of the international market, and the other is extending the life of the UKCS.

Realising this vision is essential to maintaining our world-class supply chain, continuing to support hundreds of thousands of jobs and of course, providing energy security to the UK through our indigenous resources.

Q: One of the emerging themes in the political landscape, and from some members, is the so-called energy transition – the move towards a lower

carbon future. Does this align with Vision 2035?

A: Absolutely. Worldwide need for energy is forecast to increase by a third by 2035, with global GDP doubling over the same period. With that pressure on energy supply, we firstly need to ensure we have the capacity to meet this demand, and secondly look at how we deliver this while meeting our climate obligations.

Oil and gas will still have a crucial role to play in satisfying energy demand, both globally and here in the UK, as we transition to a lower carbon economy. Our world-class supply chain with its skills and considerable expertise can also play a key role in helping to provide low carbon solutions across power, heating and transport.

Official figures show oil and gas will still supply around half of the world’s primary energy needs by 2035. Given that gas has a lower carbon footprint, we can be at the heart of this important national conversation while challenging misconceptions about our industry’s future role and contribution.

Q: Is this something we will hear more about?

A: Over the next year you will be hearing a great deal more! Vision 2035 is the golden thread that weaves together all the big issues affecting our industry. This includes the transition to a low carbon economy, improving efficiency against the backdrop of a lower for longer oil

VISION 2035

price, and a changing industry life cycle as decommissioning activity continues to grow.

One of the key components of Vision 2035 is to raise awareness of our industry. This is a two-way conversation we’ll be having with our members, many of whom are already living and breathing the energy transition, and of course in the communities we live and work in.

Q: How does decommissioning feature in Vision 2035 and what is Oil & Gas UK’s position on the topic?

A: We are the leading organisation representing all of the UK oil and gas industry’s interests. Decommissioning is a natural part of the life cycle of an oil or gas field and so in a mature basin like the UKCS, where we continue to explore and develop new discoveries, we are also decommissioning some of our assets. The UK is well-placed to win the lion’s share of contracts associated with decommissioning and then export this know-how to other maturing basins.

Oil & Gas UK already leads in this area with our *Decommissioning Insight* report, our guidelines, our conference and our breakfast briefings, and

At least 12 new developments – worth around £5 billion of capital investment – are expected to be sanctioned in 2018



Production is forecast to increase by around



Operating costs could increase by around 5% in 2018 but unit operating costs will stay at



Supply chain revenues are expected to stabilise in 2018



Free cash flow remains a major concern for the UK supply chain



obviously as activity picks up we will do even more to support our members. It is very important to build understanding of how the economics of decommissioning work and that in the context of maximising economic recovery we are also thoughtful about what infrastructure is safely and efficiently removed and when.

Q: Vision 2035 is your long-term ambition for industry. With the UK set to leave the EU next year, what are the implications of Brexit for this vision and for industry more generally?

A: I think many of us feel we are moving into the critical, meaningful period of understanding what exiting the EU could mean for our jobs and economy.


Our position remains the same – we need frictionless access to people, services and goods; to maintain a strong voice in Europe for legislation that is put in place in the meantime; and ensure that the energy market is maintained.

Q: Looking ahead, industry seems to be in for a busy and challenging landscape managing Brexit, the energy transition and communicating Vision 2035. How can it keep efficiency at the top of the agenda?


A: Oil & Gas UK's Efficiency Task Force (ETF) can continue to play a key role in keeping the focus on efficiency within companies and across the industry.

I think the ETF is a great example of how a focused project, driven by passionate and committed industry figures, can provide transformative change. For example, the ETF roadshows, which takes the case


The UKCS delivers more than half of the UK's oil and gas




There are up to **20 billion** barrels of oil and gas still to recover




The UK supply chain is a world leader with unrivalled experience in maximising recovery from a mature basin




The industry is expected to make a consistent contribution of around **£1 billion per year in production tax revenues over the next five years**



The wider tax contribution across the supply chain includes employment, national insurance and corporation



The UK oil and gas industry supports hundreds of thousands of jobs




for efficiency directly to companies' workforce, have reached over 1,000 employees at 14 events held to date.

Q: These all seem to be very profound issues – do you think the UK oil and gas industry is keeping pace with this change?


A: The reality is that we are navigating the same big issues as the rest of

the world. What gives us a starting advantage is knowing we have the expertise, resilience and ambition to engineer pragmatic and efficient solutions. It's this combination that I think is of huge benefit to the UK offshore industry, and to the country more generally. 🌐


The fall in investment from 2014-17 means production decline is likely in the early 2020s



Sustaining efficiency gains is vital if the basin is to continue to attract investment



It is important to improve exploration success and the commercial viability of existing discoveries





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A champion for change

A year into his role as industry's cultural change champion, Steve Phimister of Shell, tells us about the key areas of focus and the tools available to help industry achieve long-lasting behavioural change.

Q: Tell us a bit about what you've done in your role as cultural change champion for the industry since you were appointed?

A: We are not starting from scratch as there are already many diverse business-change journeys under way in the industry to improve cost efficiencies, productivity and margins. These are driving a range of interactions between operators, joint ventures, the supply chain and the regulator. But we want to make this more consistent across the industry.

We started out by talking with about 30 industry leaders – from operators, the supply chain and other key stakeholders and influencers. We wanted to hear diverse views and experiences of collaboration and cultural change, to understand how leaders see the gaps in their own companies and across the industry, and to explore examples of good and poor practices.

Desktop work identified the tools, resources and learnings that are available outside our industry, to help us move further forward. From this, we settled on a small number of key action areas to help accelerate the collaborative culture we want on the UK Continental Shelf. We are keen to tackle things somewhat differently to how it has been done in the past, in an effort to have a more sustained impact on industry performance. Our action areas are targeted at meaningful behavioural change, strong leadership and open sharing and learning from one another.

Q: What can you tell us about these key action areas?

A: One immediate action we have taken is to develop **Area Plan Behavioural Guidelines**. These have been written by industry, for industry, specifically through a behavioural lens. They don't describe processes or stage-gate information and they are not a regulatory requirement. Instead, they describe how we should behave with one another to get the best outcome from area planning. We chose to focus on area plans because they are current and of real importance to delivering the MER UK strategy.

The Oil and Gas Authority's *Guidance on Area Plans* provides the process framework, key objectives and expectations for developing Area Plans. Our industry *Behavioural Guidelines* are complementary to this, containing practical advice and real-life experiences in applying the right behaviours to how we work together in developing the plans. Mapped to the eight critical behaviours described in the CBQT (Collaboration Behaviour Quantification Tool), the guidelines



aim to set participants up for success by sharing best practices and signposting relevant tools and resources. All three documents complement each other and should be read together. The focus now is to ensure that the guidelines are actively being used by industry.

The critical role that industry managing directors (MDs) have agreed to play – operators and supply chain alike – is to actively champion these guidelines and ensure their broad use within their organisations. Given the behavioural focus, the industry guidelines are not only applicable to area planning, but also to any form of interaction between industry players. Our supply chain is a valuable source of expertise that can help deliver the necessary step-change in performance that we need – so I strongly encourage their proactive engagement and timely input.

Another key action area focuses on **leaders openly sharing and learning** from one another so that we can all improve. We are taking a structured approach and ensuring that our interactions are data/fact-based. We are using data and surveys to understand who is good at what and then structuring conversations between MDs without using KPIs, league tables, or being judgmental!

Recently, we used the output from the *2017 Deloitte Supply Chain Survey* to have a deeper conversation with the MDs from 13 of the participating operators. With the aim of deriving maximum value from the data we already have, we shared our results with one another and talked about the systemic areas where, as operators, we need to improve. Participants helped to stimulate roundtable discussion by sharing their *how*. Learning from one another through proactive sharing is just one example of a different way of working. >

The commitment other industry leaders and I have made is to take the discussions further and implement positive change in behaviours in our respective companies. As MDs, we are committed to continuing these interactions between leaders and our teams. We will broaden the conversation with supply chain companies and, later this year, we plan to hold a similar MD-to-MD session using, for example, CBQT outcomes.

Sharing best practice is a broader action area for us in 2018. Initially, we will focus on organisational and human resource aspects: describing the right collaborative behaviours and emphasising their importance within our organisations. Specifically, we are interested in how best to develop these behaviours in our teams, how we measure them, how we reward the right behaviours and, conversely, how we tackle and remove poor behaviours. There are companies in our basin with clear policies, processes and structures that reinforce the development and support of strong collaboration skillsets and behaviours – we can all learn from these colleagues to help improve performance across the basin. But above all, this is an area where strong leadership is required to set expectations and follow-through with our organisations. Similarly, we will be building case studies through 2018 and 2019 with the intent to share best collaborative practice. This offers rich potential to learn about and replicate good outcomes across every part of our industry.

The final focus area is ensuring that collaboration is visible as a **key enabler of Vision 2035**. Oil & Gas UK is further developing the strategic roadmap to describe the *what* and *how* of the work we need to collectively deliver to attain that vision.

Q: What does this all mean for the future?

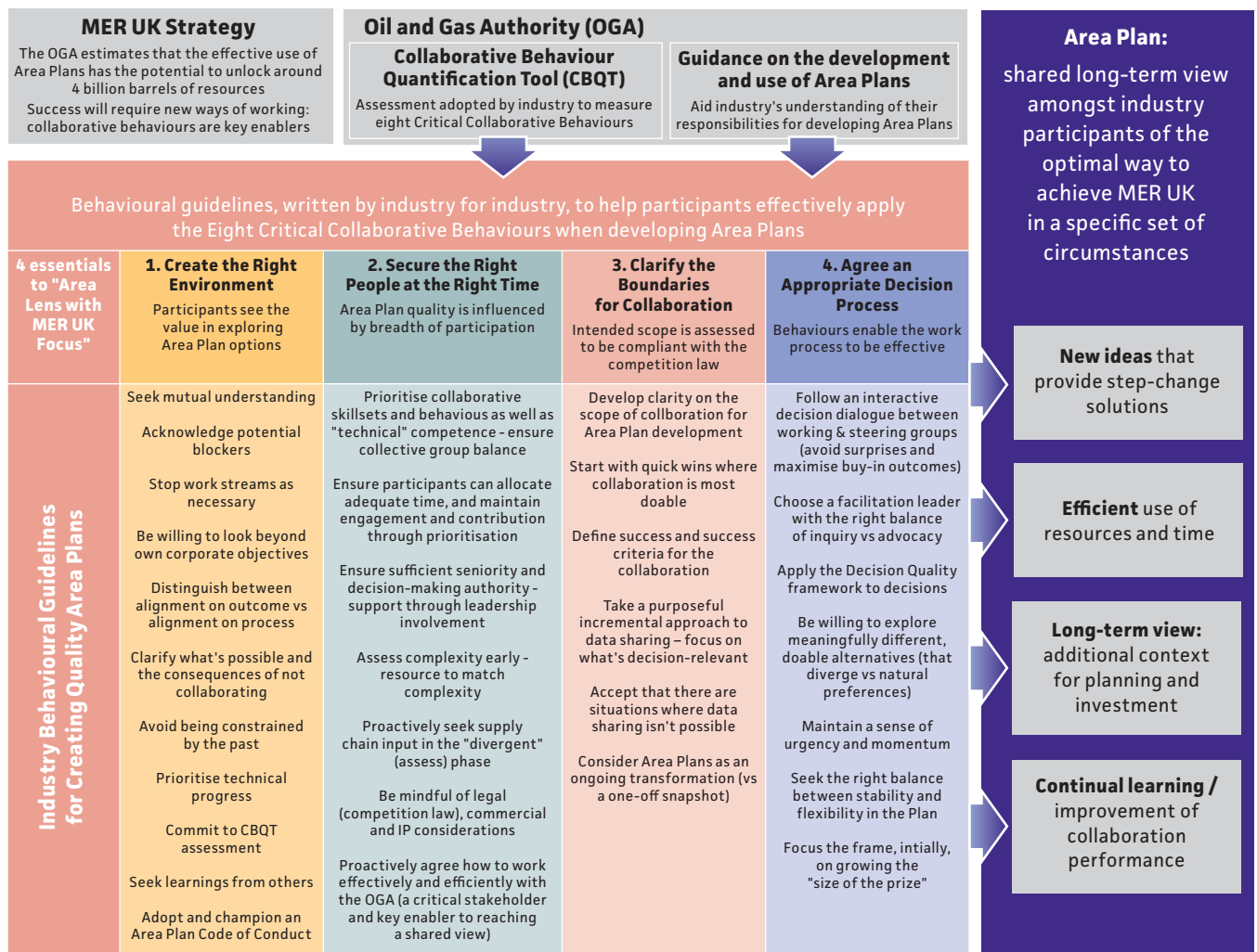
A: Our focus is on a blend of diversity, vision, processes, practices, systems and leadership – but above all, behaviours. The future success of the industry is going to be influenced greatly by the culture of the industry, and therefore by our commitment to drive behavioural change. I encourage everyone to identify, and own, the part they can play in realising this future – familiarise yourself with our plans and with the guidelines to help us deliver the enabling behaviours.

We're seeing some really positive signs and collectively we can build on this, continuing to innovate and collaborate to increase investment in the basin and deliver value to all. 🌟



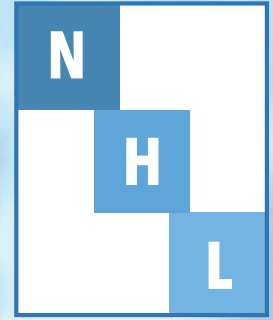
Download the Area Plan Behavioural Guidelines at <http://bit.ly/CulturalChangeChampion>.

Industry behavioural guidelines for creating quality area plans



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Quay to SUCCESS

The tide is turning for UK port authorities as, thanks to significant investment, they emerge from the industry downturn well equipped to support offshore oil and gas operations. *Wireline* checked out the current situation at Lerwick and Montrose.

In Shetland, Lerwick Port Authority has looked to build on its inherent attributes – location, natural deepwater, experience and capacity – with an investment programme totalling close to £30 million in recent years. The resulting upgrades strengthen the port’s ability to host large-scale, heavy-duty operations.

Similarly, at Montrose, the authority is continuing to roll-out a multi-million-pound development strategy to future-proof the port against the evolving demands of the industries it

serves. The work is set to bolster its flexibility and competitiveness in a demanding modern-day market.

LERWICK has long been a hub of oil and gas activity, supporting new field developments in the northern North Sea and west of Shetland, as well as routine crew change and supply operations. Plus, ever more prominently, decommissioning work.

“Our strategy is to be a multi-user port and not have all our eggs in one basket,” says chief executive

Sandra Laurenson. “For oil and gas, we’ve always supported new field developments – and that’s still part of the package – but over the past 20 years we’ve focused increasingly on decommissioning. We really see that as the next big thing for us.”

To that end, the authority has recently completed:

- an £11.95 million expansion of its Dales Voe base, creating an extra 75 metres (m) of quay length and 45,000 square metres of lay-down space. It offers a water depth of

Image courtesy of Lerwick Port Authority

12.5 m and quay strength of 60 tonnes per square metre – one of the strongest quay capacities in the UK

- the £16.5 million development of new facilities at Mair's Pier that can accommodate larger oil-related vessels. It is the biggest single capital investment in the port's history

Lerwick's industry offering also includes the multipurpose Greenhead service base – operated by energy logistics business

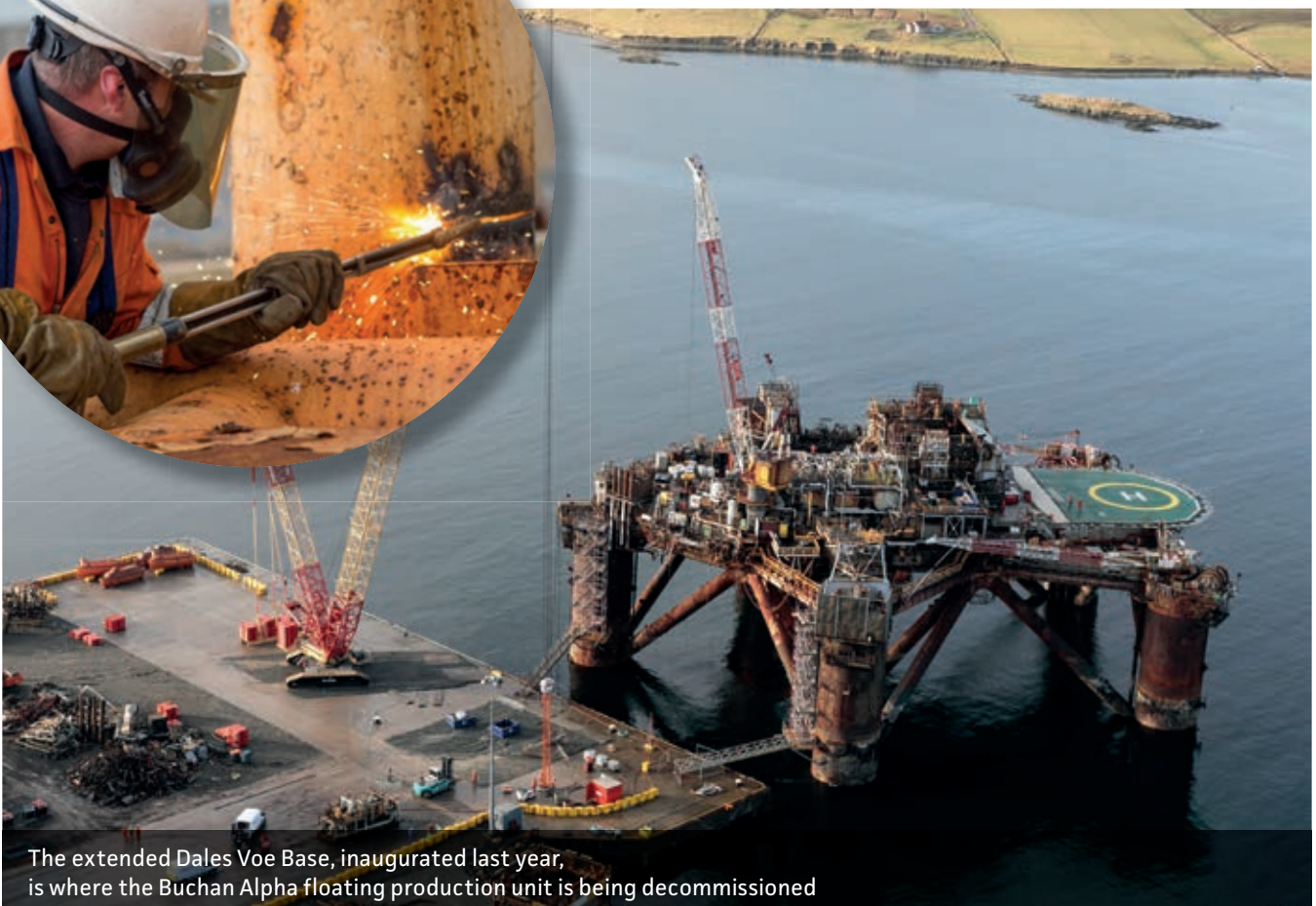
Peterson and hosting decommissioning, fabrication and engineering companies, warehousing, storage and lay-down facilities.

Over the years, Lerwick has supported some of the UK Continental Shelves' largest development projects. Recent examples include the BP-led Quad 204 programme and Statoil's Mariner Field development. This year it will host activities for Hurricane's Lancaster Field project west of Shetland.

"Lerwick can act as a hub; we have the quayside space to store large quantities of equipment so various elements of the project can be situated in one place, close to the development location," says deputy chief executive and harbourmaster Calum Grains.

More broadly, he believes the overall investment strengthens Lerwick's capabilities as ship owners and subsea contractors deploy ever-larger vessels for industry projects. >

“ We've always supported new field developments...but over the past 20 years we've focused increasingly on decommissioning. We really see that as the next big thing for us ”



The extended Dales Voe Base, inaugurated last year, is where the Buchan Alpha floating production unit is being decommissioned

Image © John Coutts

“

Buchan Alpha involves about 30 people. Local companies are well equipped to support projects of that scale, so it fits our model and supports good quality jobs”

”

Game-changers

The Dales Voe investment has further boosted Lerwick’s ability to accommodate both decommissioning and field development work, and supported its efforts to attract new custom. Most notably, Dales Voe is hosting the decommissioning of the Buchan Alpha floating production unit.

The dismantling and recycling programme for the 12,000-tonne steel structure is the biggest project of its kind to be undertaken at Lerwick – although Greenhead has decommissioned around 70,000 tonnes of material in total over the past ten years.

“The quayside strength capability and extra space are game-changers for us,” adds Calum. “It would have been possible to host the Buchan Alpha project previously, but it would have been less efficient and more challenging to execute. It has been successful so far and we’re optimistic about future decom work.”

That optimism is reflected in the port authority’s enthusiasm for creating the UK’s first ultra deepwater facility, able to host the largest semi-submersible crane vessels. The facility would allow a simpler and more efficient straight to quayside process rather than the conventional, barge-based transfer system for larger sections.

“We are the only location on the east coast of the UK with the water depth to host such a facility,” notes Sandra.



“We’ve been looking at the prospect for several years, but market conditions haven’t been right for the decisive investment needed. As the decom sector continues to mature, and with a growing political recognition that this gap in the UK market can be capitalised on, we’re keen to move it on.”

Oil and gas accounts for about 25 per cent of the port’s income and its status as a mature industry hub extends into its supply chain. “We’ve been involved in oil and gas for 50 years and in decom for 20 years,” says Sandra. “Lots of local companies are well used to working with the sector, so they have all the accreditations and skills the industry is looking for. They come as standard here.”

Calum believes decom suits the local labour market and supply chain capabilities. “It’s not labour intensive – you don’t need hundreds of people to deconstruct a platform. Buchan

Alpha involves about 30 people. Local companies are well equipped to support projects of that scale, so it fits our model and supports good quality jobs.”

“

We’ve worked hard in recent years to develop a good reputation with stakeholders such as vessel owners and shipping agents...and we need to ensure we continue to do good work to protect and enhance that reputation”

”



MONTROSE has steadily augmented its maritime infrastructure for the industry since an oil and gas service base was first established at the Angus town in the 1970s.

The port effectively comprises two large quays, one on either side of the River South Esk as it reaches the North Sea, and the process of improvement has taken on extra impetus in recent years. Around £15 million has been invested in quayside upgrade work since 2010, including opening two new deepwater berths on the south quay in 2011, as well as deepening and strengthening two berths on its north quay.

Similar enhancement work is starting this year on a further two berths on the north quay, taking the overall investment to well over £20 million. In this latest project, the quayside at the berths in question is being strengthened to 7.5 tonnes per >

Surveying the decom landscape

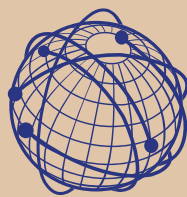
Oil & Gas UK's *Decommissioning Insight* shows how the North Sea market will take shape over the next nine years, and captures a broader picture of the opportunities in the UK, Norway, Denmark and The Netherlands. Alongside efforts to maximise economic recovery, the decommissioning market is growing steadily. It reveals that:

Forecast decommissioning expenditure over the next five years:

£400 – £800 million
on the Norwegian Continental Shelf per year

£1.7 – £2 billion
on the UK Continental Shelf per year

£650 – £800 million
total on the Dutch Continental Shelf



Supply chain companies must be able to compete in a global marketplace for decommissioning contracts

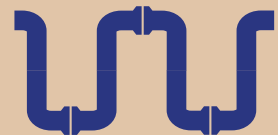
Almost 2,500 wells are forecast to be plugged and abandoned across the North Sea up to 2025, with more than two-thirds in the UK

Almost **2,500** wells



Over 200 platforms are expected to be removed in the North Sea from 2017 to 2025

Nearly 7,800 kilometres of pipeline are forecast to be decommissioned across the North Sea



35%

The Oil and Gas Authority is targeting a 35% reduction in UKCS decommissioning costs by 2035

The average forecast unit cost for well plugging and abandonment has fallen across all well types and regions of the UKCS



Download the *Decommissioning Insight* at www.oilandgasuk.co.uk/decommissioninginsight.

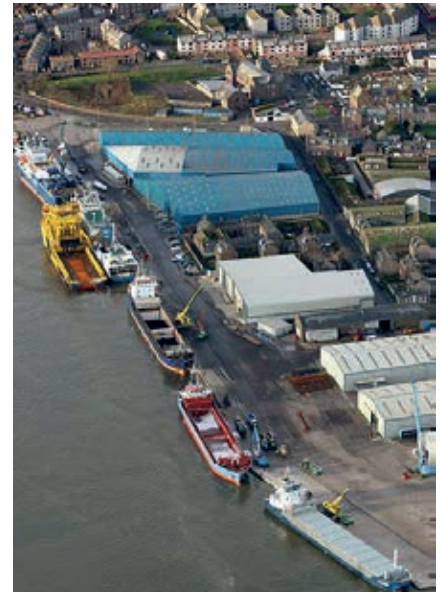
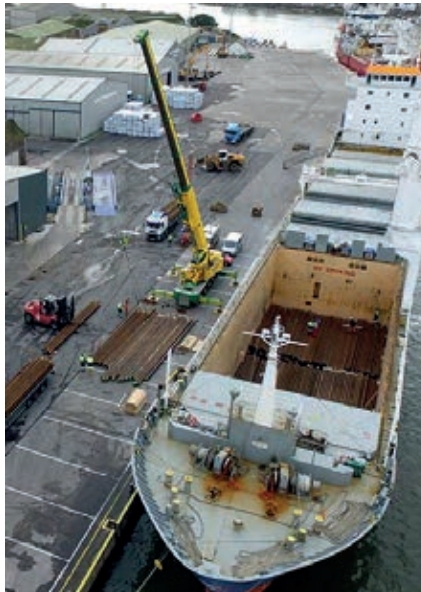
Access Oil & Gas UK's range of decommissioning literature at www.oilandgasuk.co.uk/decommissioning-literature.

square metre, while a new heavy lift pad is being installed to complement the heavy lift facilities.

“Our role essentially is to provide the infrastructure our customers need and this modernising programme reflects that,” says port authority chief executive Nik Scott-Gray. “Ships are getting bigger, the equipment we use to handle cargo is getting bigger and cargoes are getting larger, so this work is all part of our response to market development. We have to keep pace with things.”

The port supports the oil and gas industry with conventional services, with a specific focus on the chain and anchor market – storing, checking, certification and shipping kit such as chains, anchors and floats for rigs and floating production vessels.

Montrose also has a track record of successful project support, including the hook-ups of Total’s MCP-01 platform, Brent C and Fulmar A installations, as well as the fabrication and load-out of offshore accommodation vessels. Examples of



Images courtesy of Montrose Port Authority

At the same time, Montrose is looking ahead at new opportunities, including the decommissioning market.

“Because of our scale we’re unlikely to host the biggest top sections, but we have a specialist capability that equips us to take, for example, piece-small subsea sections. That’s an opportunity for us and we have to make sure we are positioned to seize it.”

The port authority has just completed an infrastructure masterplan looking

that market in mind – as is the fast-growing offshore wind sector on the east coast of Scotland. “We are in a competitive market in just about every respect in the modern-day industrial environment, and our strategy is to remain competitive and flexible,” adds Nik.

To an extent, decom is already a feature of port activity, with local businesses processing materials such as disused drill pipe or old chain for recycling or re-use. Leading North Sea contractors and operators such as Schlumberger, Transocean, Shell and BP have used, or continue to use, the port as a support base for offshore operations.

Montrose’s services are underpinned by a wider local supply chain. “Part of our role is to make sure we have the right providers based here in the port, ready to service vessels as and when required,” explains Nik.

“We’ve worked hard in recent years to develop a good reputation with stakeholders such as vessel owners and shipping agents – not least by focusing on our flexibility – and we need to ensure we continue to do good work to protect and enhance that reputation.”

“*As we look at the recovering oil and gas market, we need to keep the port’s profile high so people understand what our investment is all about and what we are equipped to do*”

the latter include the load-out of a 615 tonne two-storey module for Arco’s Thames project.

Grand plans

Overall, oil and gas business makes up about 70 per cent of revenue, derived from areas such as vessel operations or industry players that rent space at the port. “The investment programme certainly consolidates our position,” adds Nik. “Would we be handling the same level of chain and anchor work if we hadn’t done the quayside upgrade work? It’s hard to tell, but it has certainly helped to make sure we secure business for the long term.”

30 years ahead. Some of its focus is on the redevelopment of quaysides to provide more space, for example, and some is on deepening its approach channel to accommodate new generations of vessels.

“As we look at the recovering oil and gas market, we need to make sure we keep the port’s profile high so people understand what our investment is all about and what we are equipped to do,” says Nik.

Decom is very much part of Montrose’s focus – the recent investment programme is being rolled out with



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In a mature basin like the UK Continental Shelf, asset integrity is a key factor in Maximising Economic Recovery. *Wireline* turns the spotlight on two areas of focus and outlines how industry trials are showcasing the benefits of embracing technology.

Conducting non-intrusive inspection of a process pressure vessel
(image courtesy of MISTRAS)

TO THE TEST

They might not be regarded as the most glamorous technical subjects, but process vessel inspection (VI) and corrosion under insulation (CUI) are receiving new levels of industry interest. They are the prime areas of focus for the asset integrity team at the Aberdeen-based Oil & Gas Technology Centre (OGTC).

The OGTC's Asset Integrity Solution Centre (AISC) partners with industry to develop and deploy new technology, and promote initiatives that realise cost and safety gains in asset integrity management.

"Our work is very much industry-led," says manager Rebecca Allison. "Our prime role is to help bring new solutions through that meet current and future needs. There would be no point in investing in projects that are going to just sit on the shelf – they have to make a difference."

The Centre features a network of experienced industry people, some of whom are seconded from large contractors and operators. "That is key as we help developers bring technology into the market," explains Rebecca. "With both technical



Learning about the challenge of non-intrusive inspection

knowledge and an understanding of the challenges operators face, we can offer developers an insight based on our own experience."

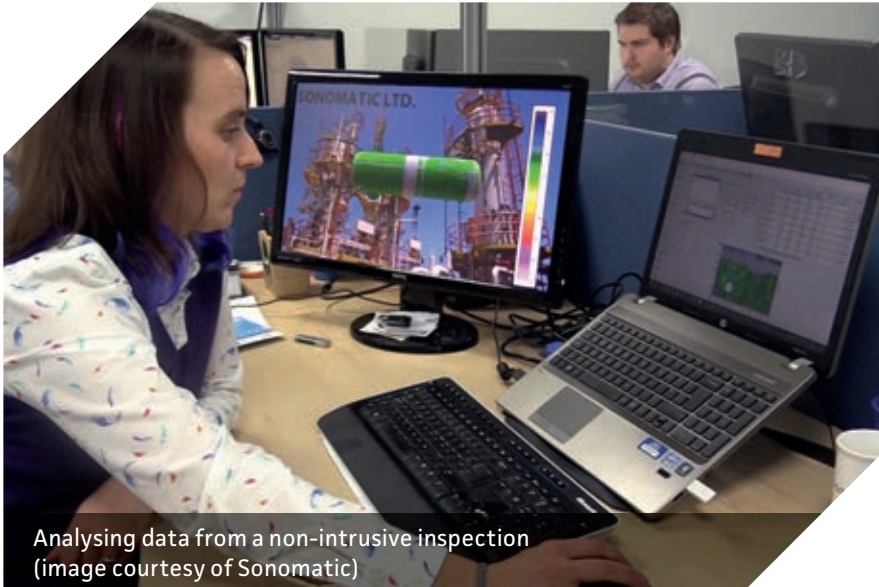
Technology testbed

The AISC's central themes of VI and CUI were handed down from the industry's Technology Leadership Board (TLB), following the *Asset Integrity Theme Landscaping Study* from Lockheed Martin, which was commissioned by Oil & Gas UK. The inherent link with industry is evident in its everyday work. It is specifically exemplified in a successful programme of trials focused on the use of non-intrusive techniques

for inspecting process pressure vessels offshore.

Conducted with Total E&P UK (Total), and hosted on their Elgin Franklin platform, the trial results have led to a reshaping of the operator's maintenance strategy and have already realised efficiencies.

"When we started looking at non-intrusive inspection (NII), we noticed variable levels of uptake in the industry," says Billy Mackay, technical specialist for the AISC and a secondee from Total. "The technology is established, but hasn't been >



Analysing data from a non-intrusive inspection (image courtesy of Sonomatic)

“ Supply chain companies are willing to invest time and resources because they can see the opportunity to prove their technology and the potential commercial benefits that follow ”

widely adopted. We saw the trials as part of an effort to push the NII agenda.”

VI conventionally involves personnel entering the vessel and therefore poses safety risks. It also contributes to production downtime, as it typically forms part of a planned shutdown programme.

The 2017 trials saw three technology providers – Eddyfi, MISTRAS and Sonomatic – deploy their individual NII solutions on two selected process pressure vessels while the vessels remained online. Separately, intrusive inspections were completed during a planned shutdown. Both forms of inspection produced essentially the same results – neither detected significant defects that posed risk to vessel integrity.

“ This was an opportunity not only to test whether the technology would work, but to learn the nuances of the individual technologies and how our work practices and processes might need to be adapted ”

“We were among the champions of asset integrity within the TLB, so when the OGTC was set up we were one of the first to get involved in that area of work,” says Dave MacKinnon, Total’s head of technology innovation. “We wanted to help it achieve some early success and the trials were a good fit – we had the opportunity in terms of the shutdown inspections and we had the bed space to accommodate the trials.”

All three trials involved the use of varying forms of ultrasonic systems. In principle, different technologies are applied to detect different kinds of damage mechanisms – internal corrosion being among the most common mechanism on the UK Continental Shelf (UKCS). Dave adds: “This was an opportunity not only to test whether the technology would work, but to learn the nuances of the individual technologies and how our work practices and processes might need to be adapted.”

The partnership approach saw the AISC procure the services of the technology providers and prepare the scope of work. Crucially, this was not just about the trials, but about the methodology of delivering NII and applying the terms of industry recommended practice – DNVGL-RP-G103 – which provides detailed technical guidance on the entire process.

“The trials worked well – there was a good relationship and a light-touch approach rather than lots of contractual paperwork,” states Dave. “For us it was quite symbiotic and has

raised the profile of a subject that many people might not know much about or find particularly glamorous, but it is absolutely central to safe and efficient operations. It is the foundation of keeping mature assets running day to day.”

Passing the baton

Following the 2017 trials, the baton was handed to Total’s maintenance and inspection strategy optimisation project.

“We knew we wanted to use this technology and we could see it made sense, but the questions were: how does it become an everyday part of our operations, what processes do we need to change and how do we evaluate and work with this technology going forward?” explains Dave.

It has become part of the remit of James Hayes, maintenance and inspection review project manager, who is leading a programme to assess where Total can identify improvements in these disciplines. “This is one of the arms of the work – to be smarter in what we do, using technology to get as much value out of our maintenance and inspection work,” says James.

NII technology has been deployed in earnest on Total’s assets in the northern North Sea and west of Shetland this year. Some of the results already demonstrate its tangible value.

Around eight vessels on Total’s Alwyn and Dunbar platforms have undergone NII and, with no anomalies found,



Reviewing data from non-intrusive inspection pilot studies on Total's Elgin Franklin platform

these have now been removed from the planned summer shutdowns, generating an estimated £500,000 in savings – a combination of operational expenditure savings and cost avoidance. More widely, an industry survey by the OGTC and ABB (see box out right) found that NII technology has the potential to deliver increased production and lower maintenance costs worth up to £242 million annually on the UKCS.

“On top of that, of course, there is the inherent safety benefit,” adds James. “NII is now one of the elements of our risk-based inspection approach.

As part of the project, Total intends to fully implement NII into its portfolio. “We’ll review all our vessels, exchanges, systems – anything that requires internal inspection – to see if they are compatible with NII. Our goal is to take every vessel on every site to the end of its working life with the support of a NII road map,” says James.

Should Total uncover any technical barriers that prevent its deployment in specific situations, they could call upon the expertise in Dave’s team and the AISC to see how the technology could be adapted or advanced to overcome them.

“The no’s are just as important as the yes’s in that context. The yes’s are numbers on the board – they’re saving money and making us a safer

operator,” asserts James. “The no’s are the interesting bit; how do we resolve those and take things up a level?” >

Fact-finding mission

The Oil & Gas Technology Centre (OGTC) and ABB carried out an industry survey to assess if and how operators were using non-intrusive inspection (NII) techniques and the potential benefits it could bring to industry. The findings show:

- The use of NII on the UK Continental Shelf (UKCS) is limited, with some operators currently making no use of the available technology.
- Adopting NII could enable increased production and lower maintenance costs worth around £242 million per year to the UKCS.
- Up to 80 per cent of vessels could be examined non-intrusively, without requiring a shutdown.
- Improved safety with up to 80 per cent fewer confined space entries required.
- A 33 per cent reduction in turnaround durations.
- Overall cost savings of up to 80 per cent compared to inspections that involve entry into a vessel.

The survey also reported that the main barriers to adopting NII are the perceived lack of viable non-destructive evaluation techniques, concerns about regulatory compliance, and transparency on the total cost of inspection. Therefore, the OGTC and ABB are now looking at ways to help industry overcome these barriers to gain the full benefits of deploying NII technology.

Download the full report at <http://bit.ly/NIIsurvey>.

He adds: “By eliminating vessels from shutdowns on a rolling basis, we are reducing costs in the long term and therefore extending field life.”

Benefits and beyond

Meanwhile, at the solution centre – and on the back of the ABB survey – Billy and his colleagues have just completed work with a group of operators, assessing their inspection regime and pinpointing how NII could be best applied. A report is being prepared for release in the coming months.

The next phase could see the solution centre engage with operators using NII to understand how they adopted the techniques and how they navigated behavioural or commercial barriers to the benefit of the wider industry.

AISC analysis suggests the average cost of an intrusive vessel inspection is £240,000 in total – compared with around £44,000 with NII – and that doesn’t include the production premium.

“By eliminating vessels from shutdowns on a rolling basis, we are reducing costs in the long term and therefore extending field life”

“NII ticks so many boxes,” adds Billy. “Beyond the cost benefits, you’re supporting better production levels. You’re not committing people to confined spaces and you’re avoiding isolation, purging and leak-testing work – all hazardous activities.”

The AISC focus on VI extends into other areas, including a ‘call for ideas’ last year on robotic inspection of process vessels – three projects are now being advanced. A similar exercise in relation to CUI is also moving forward, with a ‘call for ideas’ issued in March 2018.

CUI has also been the focus of a separate, but interlinked, collaboration between Total and the AISC. A piece of 36” pipe spool has been taken ashore and around seven technology

developers have been given the opportunity to trial their CUI detection technology on it. Their findings will be compared with those from a visual inspection – once the process of insulation removal is complete – to assess their effectiveness.

“It follows a similar model to the Elgin Franklin NII work and underlines the willingness within the industry to participate in these projects,” adds Billy. “Supply chain companies are willing to invest time and resources because they can see the opportunity to prove their technology and the potential commercial benefits that follow.”

The collaboration between the AISC and Total on the trials has been formally recognised by industry, when it won the MER UK Award in the 2017 Oil & Gas UK Awards.

Rebecca believes the AISC has achieved a great deal since it formally opened for business in February 2017. “It’s fun, but it’s hard work,” she says. “The real pleasure comes from working with companies that have come to us with an idea, then supporting them to take it forward.

“We’ve opened up this new opportunity for field trials and they are so important; they provide case study material and validation that the technology works and overcomes challenges. Of course, we can’t do that without the support of operators, so being able to facilitate and broker this key process – supported by the industry experience within our own team – is very rewarding.”



Non-intrusive inspection trials on Total’s Elgin Franklin platform

“The real pleasure comes from working with companies that have come to us with an idea, then supporting them to take it forward”



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HEALTH is Wealth

The health and wellbeing of staff are ever-greater priorities for employers at a time of major change in the industry. *Wireline* looks at two distinctive company initiatives that fit the bill.



Programmes being rolled out at BP and Centrica Storage both embrace a theme that the oil and gas industry is already familiar with – resilience.

A psychological wellbeing initiative instigated by BP across its North Sea operations takes a long-term view of how such support can not only benefit the individual, but also deliver safe and reliable operations.

And the emphasis is very much on positive thinking. “Too often in the health and safety arena we’re dealing with the reactive side and as professionals that’s not where we want to be. This was a great opportunity to put us on the front foot and, by the measures available, it has been highly successful,” says its health manager Alan Dickson.

At Centrica Storage, its rounded programme encompasses mental and physical health, and has been shaped

to promote long lasting and positive behavioural change.

“Workplace stress and other health-related issues can affect anybody and they need to be supported correctly,” says its occupational health manager Francis Riley. “We have a social and clinical responsibility to people: they come to work healthy, and they leave healthy.”

Reflect and evaluate

BP’s North Sea programme has its origins in training and support materials produced by the wider company’s central health team.

Alan’s team was already embarking on support initiatives in 2017 for staff facing challenging circumstances. These included people impacted by the transfer of assets to new owners, as well as drilling and project teams about to experience a potentially-stressful upsurge in workload. >

“ **We have a social and clinical responsibility to people: they come to work healthy, and they leave healthy** ”



Leadership academy event at BP's North Sea headquarters

At the same time – and amid a period of continuing industry uncertainty – it spotted an opportunity to mould some of the group materials into a proactive and progressive campaign for a wider audience.

The team successfully made the case for including health and wellbeing in an ongoing, multi-topic training programme for around 200 first-level leaders, such as supervisors and team leads. From late 2017 onwards, Alan and his colleagues led a series of 90-minute sessions for groups of up to 20 people at a time.

“It wasn’t necessarily for people who felt they needed support – they might already feel strong, but this might help them be even stronger. It was all about taking a positive approach,” he explains.

Each session was founded on practicalities, featuring three exercises that asked delegates to focus on how they manage:

- External resources – in particular, maintaining a support network of people around them



- Internal demands – assessing their life priorities and where they need to direct time and energy

- Internal resources – avoiding fatigue, and the consequences of it, by evaluating their work-life balance and managing their energy



“It wasn’t about telling people what to do, but encouraging them to look at where they were,” adds Alan. Practical advice and guidance was available to help delegates address individual issues that emerged from the sessions. And it wasn’t just focused on the work environment. “If you are struggling with something outside of work, the chances are you’re not going to perform at work. It’s moved care for our people up the business agenda,” says Alan.

The programme was also designed to equip first-level leaders with the skills to spot potential psychological issues affecting members of their team.

Rewrite the rules

The desire to introduce a new, forward-looking health and wellbeing culture was also the impetus behind the work at Centrica Storage, which produces and processes gas from the Rough field in the southern North Sea for Centrica.

The business has been running a series of activities, ranging from health fairs and workshops to sports-themed campaigns, but Francis says these created peaks of activity rather than achieving sustainable change.

Keen to embrace a new approach, it teamed up with specialist service provider Tua Optimum to develop a new programme for its 300-plus workforce across five offshore and onshore locations.

“It wasn’t necessarily for people who felt they needed support – they might already feel strong, but this might help them be even stronger”



It doesn't always end up as a gym, swimming or pilates programme. It might be breathing exercises... or just a chat once a quarter with their wellbeing coach to talk through coping strategies

Francis says it's the first time he has seen this kind of approach in his 30 years of professional experience. "It's based on one-to-one support from dedicated and fully-trained wellbeing coaches who aren't focused on increasing productivity, resolving a technical challenge or performing training," he explains. "It's targeted at helping us meet our goals of behavioural change and sustainability."

All employees have had the chance to take part in what is initially a three-pronged schedule:

- An individual session with a coach to help them build a picture of what makes them tick and what they want to change



- A full health check, providing benchmark statistics against which progress can be measured

- A fitness assessment, if required



A bespoke action plan emerges from this process and, as appropriate, a health and fitness training programme.

"It adds up to a really comprehensive approach," says Francis. "What I really like about it is that it doesn't always end up as a gym, swimming or pilates programme. It might be breathing exercises or a walking routine. Or it might be nothing like that at all – perhaps just a chat once a quarter with their wellbeing coach to talk through coping strategies."

Participants can maintain contact with their designated coach and undergo regular reviews to get maximum benefit from the programme.

Fit for the future

The programme was launched in early 2017, and over the course of the first year 235 people had signed up and participated in one-to-one coaching. Over the same period, Centrica Storage witnessed a seven per cent reduction in sickness absence.

Among those who took part, they lost a combined weight of 350 kilos and 8.5 metres around the stomach. Francis, however, points to the importance of mental health as part of the overall programme. "We're seeing cost savings in terms of reduced sickness absence, but we're also seeing qualitative evidence of improved mental health – we've had lots of positive feedback," he adds. "In a time of change, of reorganisation and restructure across our industry, this is really proving its worth."

"This sort of sustainability and behavioural change can't happen through assessments performed remotely on a computer. It can only come about with trained wellbeing coaches working on a one-to-one basis."

Other Centrica businesses are now showing an interest in adopting the same approach.

At BP, meanwhile, Alan says virtually every participant got something from the programme and the >



Centrica Storage employees participating in a wellbeing workshop

**What do the participants say?
...At BP**

Fraser Buchan, area operations health and safety manager at BP, says the programme invited people to take a step back and assess their priorities – something it’s been difficult for many to do recently as they’ve been focused on short-term issues such as meeting project deadlines or managing the implications and uncertainties of organisational change.



Fraser Buchan

“It helps you understand where you need to be applying your time, attention and energy,” he says. “The course and its exercises aren’t complicated, and they very quickly let you understand where your gaps are.”

After a period of business efficiencies and the formation of a new business model at BP, he says the programme timing was good as it has enabled the business to strengthen its focus on the wellbeing of its people.

Fraser adds: “It’s really good to see mental health, resilience and wellbeing talked about – not just in BP, but in the wider industry.”



Ross Nickson, environmental team lead at BP, says: “It really helps to have psychological wellbeing recognised as an issue because of the changes that have been going on in the industry.

“The programme raised awareness of the tools and techniques we can use with our teams to address issues such as fatigue. More broadly, it’s struck a chord – we really need to be aware of it and be sensitive to it.”

Ross Nickson

...At Centrica Storage

Liam Jackson, a project manager at Centrica Storage, says the routine contact with wellbeing coaches who come to know you makes the programme genuinely distinctive.

“You can have daily support if you need it,” he says. “It’s not like having a one-off medical, coming up with a programme and getting on with it. You can review and adapt your approach to suit at any time. It’s a long-term journey and they’re on it with you.”



Liam Jackson

Liam says the support has helped him achieve a better work-life balance. “I used to take my laptop home with me, but now I’m focused on getting my work done during working hours. And I’ve actually become more productive, while also spending more time with my family,” he explains.

“That’s down to the coaching. They don’t tell you what to do, but guide you on how to think about it and come up with the best solution for you.”

“ Resilience is not about taking on more work... We’re trying to help people perform, and if individuals perform then the business performs ”


feedback suggested people welcomed the chance to take time out for self-reflection. “Most training is focused on being a more productive employee, but this was about ‘how do I make myself feel better?’,” he says.

“We weren’t looking to produce measurable results, but to raise awareness. We got tremendously positive feedback but, critically, it now has our senior management asking us how we might take it forward. Its success has been recognised and there’s an opportunity to do more.”

That ‘more’ is set to take the form of a full-scale physical wellbeing and mental health programme for the entire North Sea workforce. “With a fitter and more alert workforce, the business is less likely to witness mistakes and less likely to have a process safety event,” adds Alan. “If you can be the best version of yourself today – and that’s the ultimate aim – you’re less likely to make a mistake, whether you’re operating a valve or writing a procedure.”

Alan and Francis share a belief that creating more resilient people leads to a more resilient business.

“Resilience is not about taking on more work,” says Alan. “It’s not about the business trying to get more out of people; everybody has a heavy workload already. We’re trying to help people perform, and if individuals perform then the business performs.”

Francis adds: “We’ve engaged with our employees in this way to make them more resilient, and they’re benefiting by looking at things from new perspectives.” 

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