

BRENT E-NEWS

SHELL BRENT FIELD DECOMMISSIONING PROJECT

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A WORD FROM DUNCAN



Welcome to Issue #19 of Brent E-News

This edition will focus on an update of the status of the Decommissioning Programme (DP), and review of activities and progress for the Brent Decommissioning Project.

Brent Decommissioning Programme

By the closure of the 60 day Public Consultation for the Brent DP on 10 April 2017, we received 38 responses from individuals and organisations, comprising approximately 100 comments. These included members of the public, stakeholders and NGOs. All comments were addressed and received a written response, and these comments have also informed the update to the Decommissioning Programme. We also followed up with one-to-one engagements with some consultees, understanding issues and providing more detailed answers to the matters raised. In addition, BEIS (Department for Business, Energy and Industrial Strategy) received responses from their statutory consultees, which we have addressed directly with the Regulator.

The Decommissioning Programme continues to advance through the regulatory process, which will include the UK government when ready applying to OSPAR for derogations ahead of final approval.

At the end of December 2017, BEIS issued their revised Draft Guidance Notes for the Decommissioning of Offshore Installations and Pipelines to the oil and gas community for final review. We provided detailed feedback in February.

External recognition

We were delighted that the Brent Decommissioning Project was recognised in two prestigious industry awards at the end of 2017. The Project won the Innovation and Business Efficiency Award in the Large Company category at the Oil & Gas UK Annual Awards on 2 November 2017, and Shell (RDS) won the 'Project Management Company of the Year' on 20 November 2017 at the Association of Project Managers annual awards in London, for how we deliver major projects illustrated by Prelude and Brent Decommissioning. (You can learn more in a separate article on the Awards in this edition)

Sharing lessons learned

As the oil and gas decommissioning sector continues to develop, we have been proactive in sharing our experiences,

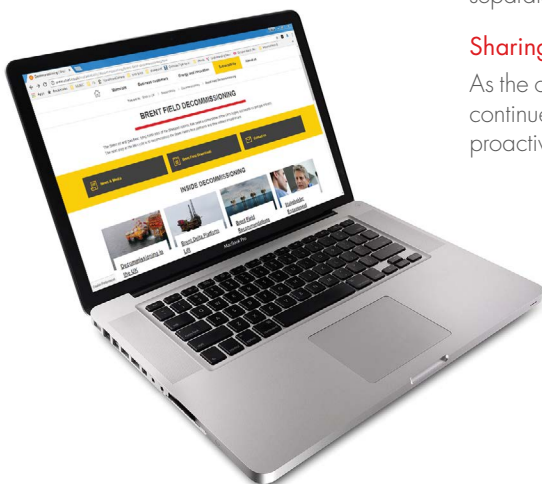
knowledge, and lessons learned, with the industry. Operators and the supply chain are working together towards the OGA key focus areas of Maximising Economic Recovery (MER), improving efficiencies, and reducing cost, and the Brent Project presented at several events in the second half of 2017. These included Offshore Europe 2017, and the Decom North Sea Annual Conference at St. Andrews, and the NPF conference in Oslo. (You can read more about the presentations in this edition).

Final thoughts

2017 was a milestone year for the Brent Project; the successful single lift of the Brent Delta topside, the completion of Public Consultation for the Decommissioning Programme after 10 years of preparation, and excellent progress offshore on preparations and execution of a wide range of workscopes. The focus for 2018 will be on progressing Attic Oil recovery and downman preparations on Brent Bravo, completing the wells P&A on Brent Alpha, and looking forward to approval of the DP. We will continue to update you as the Project progresses.

Thank you for your continuing interest and involvement in Brent.

Duncan Manning
Brent Asset Manager



ONE-TO-ONE ENGAGEMENT

If you would like to be briefed one-to-one on any aspect of the Brent Decommissioning Project's developments, or would like to raise any particular queries or issues with the Project team, please contact us at www.shell.co.uk/brentdecomm or you can also get in touch with the team via the 'Contact us' link on the website.

A WORD FROM ALISTAIR



Looking back on 2017, I would like to congratulate the Brent Decommissioning Project team on the great progress and engineering successes, including: the record-breaking Delta topside lift; the completion of the wells P&A on Bravo; and the completion of P&A on over half the Alpha wells. The subsequent implementation of lessons-learned also positively contributed to improving efficiency and cost-saving.

2018 promises to be equally busy, as we aim to conclude the preparations for the lift of the Brent Bravo topside, complete the wells P&A on Alpha, and progress the engineering scopes for the topside and jacket, ahead of their removal. Work will be ongoing on Brent Charlie, as we integrate the decommissioning preparations for the wells with the day-to-day production operations, which is complex and challenging.

Last year we reviewed our experiences from the Delta topside preparation and single lift, and translated the lessons learned into significant changes to the Bravo topside lift design and scope. This involved close collaboration with Allseas, and the execution teams offshore, and we



Brent Alpha

have now installed concrete lifting points, instead of the steel cruciforms used on Delta, resulting in simplified scopes, and significant time and cost-savings. (See the article in this edition).

Able UK has made good progress on the dismantling and recycling of the Delta topside at the Seaton Port facility, and is on target to complete the work in 2018. You can read about their work in this issue.

Brent Alpha jacket

You may have seen in the media at the end of last year, that we signed a contract with Heerema Marine Contractors (HMC) to remove the upper portion of the Brent Alpha jacket, as part of the decommissioning of the Brent Field. The Alpha steel jacket weighs around 31,500 tonnes, and the upper portion of the steel jacket will be cut at a depth of -84.5m. The total steel from the upper portion of the BA jacket (including integral conductors) is around 9,000 tonnes.

HMC will be using a new generation, semi-submersible crane vessel, the Sleipnir, which can remove the upper portion of the Alpha jacket and conductors in a single lift. This heavy lift vessel is planned to lift the jacket directly to AF Decom's deepwater quayside, in Vats, Norway, reducing the number of lifts required to transport the jacket, the distance to the yard, and the offshore exposure.

Able UK has been contracted to recycle the topsides for Brent Delta, Bravo and Alpha, with an option on Brent Charlie, and Shell has every confidence in their ability to safely dismantle and recycle these facilities. As the Sleipnir requires a deep-water berth, taking

the jacket to Able UK would have required 2 lifts – onto a barge and then a transfer to the quay, one of the reasons we have opted for a Norwegian yard.

Since the original single lift contract was awarded to Allseas in 2013, there has been a significant change in market conditions. Given the drive from the OGA to demonstrate cost-efficiencies in decommissioning, we looked for competitive, commercial proposals for an alternative jacket lift. The heavy lift companies are increasing capacity, reducing costs, and developing alternative execution strategies, hence the decision to award the Alpha jacket lift contract to HMC.

Final thoughts

The Brent Decommissioning Project is now in its 12th year, and I am very proud of what we have achieved so far. It has been a tremendous team effort, both onshore and offshore, and we continue to move into new areas of execution and project delivery, working collaboratively, and aiming to continue our drive to be efficient and cost effective. But above all we must work safely, and my main aim for 2018 is that all our decommissioning activities achieve 'Goal Zero'.

Alistair Hope

Brent Decommissioning Project Director

CONTACT US

For further information on the Project, please visit www.shell.co.uk/brentdecomm or, you can also get in touch with the team via the 'Contact Us' link on the website.

SHARING THE BRENT EXPERIENCES

The Brent Team has always been committed to supporting the development of a cost-efficient and effective decommissioning sector for the oil and gas industry, and during the 12 years of the Project we have been invited to present updates and lessons learned at many oil and gas, and decommissioning conferences, seminars and events. 2017 was no exception, and we were pleased to share our experiences, challenges and successes with a wide range of audiences from operators, the supply chain, regulators, government, students, and consultants.

IN MAY 2017, DUNCAN MANNING SHOWCASED THE DRAMATIC FILM OF THE DELTA SINGLE LIFT BY THE PIONEERING SPIRIT, AND THE LOAD IN AT ABLE UK'S YARD IN HARTLEPOOL, AT THE ANNUAL DECOM NORTH SEA OFFSHORE CONFERENCE IN ABERDEEN.

The SPE Offshore Europe 2017 Conference in September featured dedicated sessions on Decommissioning, which has been developing an increasing profile at this prestigious event. Held in Aberdeen every 2 years, this major, international show attracts many thousands of visitors from around the globe, and the final day decommissioning forum in 2017 was very popular. Shell U.K.'s V-P Steve Phimister chaired a high-profile panel of industry experts, with Duncan Manning and Alistair Hope also fielding many questions from the floor.

Later in the year, November proved an exceptionally busy month for external engagements. We were invited by NERC (Natural Environment Research Council) to provide a full day seminar at Aberdeen University for 30 PhD students, from a range of environmental and engineering disciplines. They were very engaged and interested in all aspects of decommissioning, and we were delighted to support the development of the next generation of technical experts, who will be delivering new phases of decommissioning in the future.

In late November, Andrew Parkinson, Wells Operations Manager for Brent, presented at the annual Decom North Sea/Oil &

Gas UK 2 day St. Andrews conference on the understanding and implementation of the extensive Wells P&A lessons learned. He was joined by Ron Themsen, Project Manager for Brent Bravo, in a joint presentation with Wood and Stork who spoke about the implementation of the ECITB's Project Collaboration Toolkit which aided the successful 2017 campaign on Brent Bravo model. This 'collaboration for success' theme was also presented at the 2-yearly Project Management Conference held in Aberdeen on 31 October 2017.

Also in November, The Oil & Gas Authority (OGA) invited Duncan Manning and William Lindsay to support their ambitious, international 'Hackathon' events in Norway and Aberdeen. These events were pitched as a major North Sea effort to collectively come up with the best ideas in optimizing late life field assets and field abandonment, with view to bringing new, cost-saving technologies into play.

2018 has started in the same vein, and in February, Duncan and William shared insights into Late Life Asset Management, and an update on the Brent Project, with an international audience at the Norway Annual Decom Conference in Oslo.

THE WINNING TEAMS

We were delighted that the Brent Decommissioning Project was recognised in two prestigious industry awards at the end of 2017. The Project won the Innovation and Business Efficiency Award in the Large Company category at the Oil & Gas UK Annual Awards on 2 November 2017. The Brent Decommissioning Project submission demonstrated how we substantially reduced costs over the last three years, through identifying multiple opportunities to drive efficiencies, significantly reduce offshore hours and exposure, and down man platforms sooner.

Accepting the award on behalf of the team, Duncan Manning said, 'I am very proud of the Brent Project team's achievements. We have halved well P&A costs, introduced new contracting models, adopted innovative technologies, and developed collaborative team cultures, with a shared vision, working closely across multi-disciplines and the supply chain, and are committed to sharing these lessons learned with the industry.'

'Adopting new approaches to our decommissioning business, and delivering the extensive cost savings, required an exceptional set of professionals, working as one team towards a shared vision and goals. Successful business innovation requires a change in mind set and culture to learn how to 'do things differently', share ideas, collaborate across disciplines, and with other companies, with different cultures and working practices. Sustainability is driven by a willingness to listen, adapt, negotiate, share risk and embrace challenges. Flexibility, and transparent communications were key to exemplary team work and delivery.'

Shell (RDS) also won the 'Project Management Company of the Year' on 20 November 2017 at the Association of Project Managers annual awards in London, for a combined entry in the delivery of major projects, illustrated by Shell's Prelude LNG vessel destined for Australia, and Brent Decommissioning's innovative, record breaking single lift of the Delta topside by the Pioneering Spirit.



The Brent Team collecting the Oil & Gas UK Award



William Lindsay, Bethan Vasey and Alistair Hope with the APM Award



Brent Delta topside - before and after the successful removal of the flare stack at Able UK

DISAPPEARING DELTA BENEFITS THE LOCAL COMMUNITY

Since Brent Delta's topside was delivered to Able UK in Hartlepool last May, significant progress has been made with the dismantling and recycling of the structure. Over 97% is planned to be recycled, and the Able team are well on schedule.

The 'soft strip' of the furniture, equipment, lighting etc. has been completed, and Able has made a substantial donation to a facility for the homeless in South Tyneside. As an example, Emmaus North East has been given 50 televisions and DVDs, and other goods - all salvaged from the Brent Delta, including kitchenware, and a large number of boots.

Neil Jarvis, Able UK's Project Director for Brent dismantling and recycling, said: 'Emmaus is among a number of charities we have been able to help with donations from the Brent Delta. Other organisations have included Hartlepool Foodbank, North East

Homeless and Old Park Farm Kennels as part of the Save our Strays (SOS) initiative'.

In addition, the arrival of the Delta has provided an opportunity for 3 local young people, as Shell is now sponsoring the

apprentices at Able. Their roles include assisting in decommissioning design and engineering works, working alongside the project engineering team for demolition and decommissioning of the topside, and assisting with Able's payroll.



The Able UK team skillfully remove the flare stack from Delta in a safe and successful operation

BRAVO HAS A CONCRETE SOLUTION

2017 was a very busy and successful year for single lift and downmanning preparation work on Brent Bravo, requiring the fine-tuned coordination of a wide range of activities. Successful integration and execution was dependent on excellent cooperation between offshore and onshore teams, and close collaboration between the many contractors, suppliers, and platform crews.

Having reviewed our experiences from the Brent Delta topside preparation and single lift, we made significant changes to the Bravo topside lift design and scope. Working closely with Allseas, and the execution teams offshore, we changed the engineering design, installing concrete lifting points, replacing the steel cruciforms used on Delta. This resulted in simplified scopes, and outstanding time and cost-savings.

The deliverables for Bravo tell their own story, and included: pouring 800 cubic metres of grout; 7,560m of weld runs; removing 370 tonnes of



Underside of Brent Bravo – Introduce 6 mass concrete lift points (shown in blue, 4 south and 2 north)

conductors; installing and commissioning two 1.8MW generators; 30 tonnes of strengthening plates; running 8,000m of cables; and erecting/dismantling 545 tonnes of scaffolding.

William Lindsay, Head of Project Delivery for the Brent Project said; 'This could not have been achieved without a great 'one-team, all -in-it-together' culture and mindset. The workforce demonstrated integrated and collaborative ways of working, and combined with the many

individual contributions, meant this was a very rewarding overall campaign.

'A measure of the complexity is that we inducted over 383 personnel prior to going offshore, and the 2017 campaign was represented by 29 contractors and suppliers, resulting in almost 200,000 offshore hours to deliver the work.'

Activities are ongoing for 2018, as we move towards the anticipated goal of lifting the Bravo topside in 2019.



Brent Bravo underdeck lift point box



LiftPoint 5



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