

Working together to come to a common standard on well decommissioning

By State Supervision of Mines, The Netherlands

The North Sea Offshore Authorities Forum (NSOAF) countries have expressed their wish for a common code of practise on well decommissioning and have advised the E&P Trade associations in the respective country's to come up with such a code of practise.

The NSOAF consists of representatives of authorities responsible for the regulation or supervision of offshore activities bordering the North Sea or adjacent to it. The current membership represents Denmark, Faroe Islands, Germany, Republic of Ireland, The Netherlands, Norway, Sweden and The United Kingdom. NSOAF is set up to consider issues within the responsibility of the member authorities. One of the aims of the Forum is to develop and adopt common procedures/standards where appropriate and to co-operate in cross border activities.

To achieve its aims, NSOAF has set up working groups, one of which is the Wells Working Group (WWG). The NSOAF-WWG was formally established in 2006. It exchanges information and cooperates on safety and working environment aspects relating to drilling and well operations, well control, well integrity and blowout prevention. The group's activities also contribute to continuous improvement of safety and the working environment during drilling operations, well workovers and other well-related activities. In addition, it is working to reduce administrative burdens for companies which operate on several continental shelves in the North Sea area. The WWG seeks co-operation with the industry both nationally (industry associations) and internationally (SPE, IADC, IWCF etc.) to contribute to a safer E&P sector. The activities of the NSOAF-WWG are closely followed by some of the members in the International Regulators Forum (IRF). As such, regulatory well specialists from Canada (both Canada-Newfoundland & Labrador Offshore Petroleum Board and Canada Nova Scotia Offshore Petroleum Board) and Australia (National Offshore Petroleum Safety and Environmental Management Authority) have attended meetings and participated in discussions.

The WWG presented, at the Annual NSOAF Meeting in May 2017 in The Hague, a position paper on well decommissioning. Well decommissioning is the intervention to permanently plug and abandon a wellbore that will no longer be used or re-entered. Well decommissioning, being the last phase of a well's life cycle, is also an important activity to safeguard human and environmental interests for the post-hydrocarbon era. As the number of oil and gas fields in the North Sea that are approaching the end of their lifetime is rapidly increasing, there has been an increased focus on well decommissioning.

The planning for decommissioning and the actual work to plug and abandon the wells have already started. Some key figures in a few NSOAF countries:

NSOAF Country (Continental Shelf)	Approximate # wells eventually requiring decommissioning	Approximate # of wells scheduled to be decommissioned in next decade
Norway ³	1911	unknown
United Kingdom ⁴	4300	1224
The Netherlands ⁵	1200	unknown
Ireland	40	24
Canada (NS and NL)	100	50
Denmark	500	50

³ Trends in risk level in petroleum activity in Norwegian continental shelf (RNNP) 2015.

⁴ Decommissioning Insight 2015 – Oil and Gas UK.

⁵ In addition to the approximate 1200 offshore wells, some 2400 onshore wells will eventually also require decommission.

The industry is only now starting its decommissioning responsibilities as there has been delays in decommissioning activities observed throughout the industry. Challenges have been experienced with regard to time, cost, and technical performance on decommissioning projects that have been undertaken so far. Well decommissioning is one of the highest cost areas, comprising of about 60% of the total decommissioning cost which is followed by topsides at 9.8%, then subsea structures at 6.2%. Based on real data, platform wells range from € 2-11 million (\$ 3-12 million) per well and average € 5 million (\$ 5.6 million) per well. Subsea wells have been as high as € 17.8 million (\$ 19.9 million), with the low at € 5,5 million (\$ 6.13 million) and the average € 9.3 million (\$ 10.42 million). In many cases, well decommissioning has proven to be more complicated than initially anticipated, either because accurate well data is no longer available or well integrity and well status are poorly understood. In addition, annular casing pressures continue to complicate well decommissioning strategies. These complications lead to cost overruns and more importantly introduce a potential for incidents caused by the frequent changes that need to be applied to the work program.

The WWG has found it necessary to address various challenges related to well decommissioning. The position paper, identifies the various countries' requirements on well decommissioning and discuss the main challenges in well decommissioning and thereby forms part of the WWG's endeavor to achieve the following goals:

- Reduce the risk of well decommissioning incidents in the NSOAF area;
- Identify problem areas and challenges in well decommissioning management;
- Address gaps between jurisdiction across cooperating NSOAF countries;
- Reach a common understanding of regulatory requirements and national standards;
- Provide industry with a regulatory environment allowing for advances in well decommissioning processes meeting HSE requirements (stimulate improvements and qualified solutions); and
- Highlight the importance of considering well decommissioning from the design phase of a well's lifecycle.

The WWG position paper addresses for each respective NSOAF country, the legislative approaches, challenges and differences on the criteria for well decommissioning barriers (i.e. varying cement heights in annuli, lengths of cement plugs, testing and logging requirements to qualify for barrier acceptance, etc.). The main findings of the paper are that the goal setting regulatory requirements are very similar in each of the NSOAF countries. However, the prescriptive regulatory requirements and related National Standards contain significant inconsistencies on the criteria for well decommissioning barriers.

The WWG concludes that substantial benefits could be achieved by minimising, preferably eliminating these inconsistencies and that it would seem doable. The position WWG paper recommends alignment of guidelines and standards within NSOAF territory on well decommissioning towards one Code of Practice which may result in the following possible gains:

- Capitalize on 'lessons learned' and in doing so assure that a common set of best practices is developed and updated;
- Set of common standards towards E&P service contractors;
- Benefits NSOAF countries that have no national standard yet;
- Multi-country approach instead of individual approach may strengthen the social license to operate of the E&P sector;
- One voice from the 'North Sea regulator community' towards their E&P operators assuring clarity of purpose;
- Development of well decommissioning technology;

- Would the common approach result in a common standard for NSOAF countries, there may be a potential future outcome for alignment and harmonization on a EU scale possibly followed on an international scale and ultimately in international standardization through ISO; and
- Not aligning is deemed a missed chance by the WWG.

All NSOAF member states welcomed the WWG analysis and recommendations at their plenary meeting in The Hague in 2017. They committed, as a follow up, to send a letter with the WWG recommendations to the E&P Trade associations in the respective NSOAF member state countries as they are the owner of their respective National Standards and guidelines. Agreeing upfront a set of minimum requirements of well decommissioning barriers that could form the basis for a joint Code of Practice might be helpful in achieving this common goal. In November 2018 the NSOAF-WWG will evaluate the response and decide on the way forward.

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