



## OIL & GAS

# OFFSHORE DECOMMISSIONING

## Managing risk in the offshore industry

Driven by our purpose of safeguarding life, property and the environment, DNV GL enables organisations to make risk based decisions during the life time of the decommissioning phase. By getting involved early, DNV GL helps clients cut down on costs and maintain high safety standards.

### Decommissioning of offshore infrastructure

With the recent merger, DNV GL, emerges as a leading technical advisor for the offshore decommissioning industry through the competence and experience of legacy GL Noble Denton and legacy DNV. The merged company has been involved with decommissioning projects for over 20 years covering a range of services across its worldwide network. It provides support to platform removal operations from desktop assessments through offshore supervision to the provision of staff for disposal yards, environmental and safety studies and developing and maintaining industry Recommended Practices.

### Decommissioning - an integrated service

DNV GL has provided support for entire platforms to individual packages and isolated appraisal wells. DNV GL's integrated services includes the following subparts from feasibility to execution and monitoring:

- Environmental and safety services
- Technical and operational issues
- Offshore supervision
- Verification services
- Technology qualification.

DNV GL is able to support companies with responsibilities for decommissioning through its core service areas.

#### Environmental services

DNV GL has been in the forefront of developing environmental standards to ensure regulatory compliance and address environmentally sensitive issues. Below are some of the services provided:

- Environmental inventories
- Environmental impact assessment
- Environmental monitoring.

#### Safety services

DNV GL has technical safety experts located around the globe with extensive experience in offshore safety. DNV GL offers the following services to provide clients with total risk potential to personnel:

- HAZID/HAZOP studies
- Quantitative risk assessments
- Qualitative safety and working environment evaluations.

#### Technical and operational issues

DNV GL offers the following services to facilitate decision making relating to the feasibility of options, and the subsequent removal operations:

- Technical feasibility studies
- Technical verification and advisory with respect to structure, hydrodynamic and geotechnical
- Marine operation technical and operational evaluation and verification
- Marine warranty related to removal operations
- Classification services
- Heavy lift verification
- Concept evaluation
- Cost analysis and estimation
- Review and execute hydrodynamic, geotechnical, material and / or structural analysis and evaluations
- Disposal yard activities.

#### Offshore supervision

DNV GL typically provides offshore supervision through both client representatives and marine warranty surveyors.

- On the platform before and during lifting operations
- On the lifting vessel from prior to field entry through to demobilisation, including on site approval of marine operations
- May include a presence during towage for critical operations.

#### Verification and technology qualification

DNV GL adopted industry recognised risk based verification in decommissioning and dismantling of offshore installations and structures to ensure a balance between the cost / efforts to control the operational and technological risks associated with decommissioning

#### DNV GL RECOMMENDED PRACTICES

- DNV-RP-H101 Risk Management in Marine - and Subsea Operations
- DNV-RP-H102 Marine operations during Removal of Offshore Installations
- DNV-RP-H103 Modelling and Analysis of Marine Operations
- DNV-OSS-300, Risk Based Verification
- DNV Rules for Planning and Execution of Marine Operations, January 2000.



activities and the benefits derived from implementation of the control measures. This is achieved by focusing resource on high risk critical elements of the decommissioning process, thus providing savings in cost and time.

To effectively manage the risks associated with technology deployment on decommissioning projects, we offer a Technology Qualification process of proving evidence and assurance that the technology will function within specific limits with an acceptable level of confidence. To ensure that all the relevant risks are appropriately evaluated, we typically use a multi-disciplinary team. This combines in-depth knowledge of the technology with the best risk and reliability techniques. Subsequently, we propose appropriate actions to mitigate the identified risks, based on their priority.

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