

# Verification for offshore installations

Operators have an obligation to comply with the Offshore Installations (Safety Case) Regulations 2005 (OSCR) and produce a Safety Case for all their production and non-production installations operating in UK waters.

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Having an effective verification scheme, as required by the OSCR, provides assurance to both the duty holder and regulatory authorities, that the duty holder has the means to prevent, control, or mitigate against, the effects of major accident hazards.

## Safety Cases

A Safety Case is a formal statement of how an operator intends to manage an installation safely. Its main purpose is to help protect against injury or loss of life by minimising the possibility of major accidents.

There are two types of Safety Case:

- operations Safety Case for all installations
- Safety Case for dismantlement of fixed installations.

The operator or owner who prepares a Safety Case is referred to as the duty holder and is responsible for managing the Safety Case of an installation.

## The benefits of verification

The key benefit of using a verification scheme is the ability to focus inspection and maintenance efforts where risks are highest. By scheduling your activities in this way, any necessary maintenance can be carried out during planned shutdowns, effectively minimising the risk and cost of having to stop operations to carry out essential (and unplanned) maintenance.

In addition, the implementation of a verification scheme demonstrates that safety has been scrutinised to the highest level and is being managed in a standardised and controlled manner which helps to instil confidence in your operation.

## Why choose Lloyd's Register?

In choosing the Lloyd's Register Group you are assured of a service which provides:

- an impartial viewpoint from an organisation with financial, political and technical independence
- stability, expertise and support derived from our extensive capability in verification, which also includes an overall package of support services
- highly skilled and competent personnel with cross-disciplinary expertise in the fields of fixed facilities, pipelines, corrosion engineering, systems integrity and criticality based verification
- extensive knowledge and experience of creating verification schemes for UK offshore installations and onshore plants gained by being a market leader in this field.



## How we develop verification schemes

The development process comprises a number of processes:

- identification of major accident hazards (MAH)
- identification of safety critical elements (SCEs)
- development of a matrix to demonstrate the relationship between MAHs and SCEs
- development of performance standards for identified SCEs
- development of verification work instructions (VWIs)
- development of verification scheme management and control systems
- operation of the tests and examinations listed in the VWIs.

We also conduct the following activities during verification scheme development.

## Suitability assessment

It is vital that SCEs and specified plant are 'suitable' and remain in good repair and condition throughout the installation's life cycle.

For a SCE to be suitable it must be appropriate for its intended use, dependable and effective and able to perform as required. Where additions, such as major repairs, modifications or replacements are planned on a SCE, appropriate verification activities are undertaken to show that the element will be suitable once in operation.

## Availability and reliability analysis

We use actual field failure rate data, if available, or data from our comprehensive failure rate data bank, to analyse the availability and reliability of SCEs. The results are used to develop SMART (specific, measurable, achievable, realistic, timely) performance standards which support the creation of a maintenance strategy. Failure mode and effects analyses (FMEA) and fault tree analyses (FTA) are also conducted.

## Maintenance spares strategy

Using specially designed software and the results from our earlier analyses, our engineers help you develop and implement a maintenance strategy that optimises spares holding.

## Enactment of inspection

Once the verification scheme has been put in place our surveyors act as independent competent persons to operate written schemes of examination and perform the necessary tests and examinations required to meet all relevant performance standards for safety critical elements.

[www.lr.org](http://www.lr.org)

**For further information please contact**

### Aberdeen

Phil Jamieson  
Lloyd's Register EMEA  
Denburn House  
25 Union Terrace  
Aberdeen, AB10 1NN, UK  
**T** +44 (0)1224 267457  
**F** +44 (0)1224 267400  
**E** [phil.jamieson@lr.org](mailto:phil.jamieson@lr.org)

### Europe Middle East and Africa

James Drummond  
Lloyd's Register EMEA  
**T** +44 (0)1224 267439  
**M** +44 (0)7917 073978  
**E** [oilandgasemea@lr.org](mailto:oilandgasemea@lr.org)

### Americas

Bill Westcott  
Lloyd's Register Americas Inc.,  
**T** +1 (1)281 675 3109  
**M** +1 (1)713 443 5244  
**E** [oilandgasamericas@lr.org](mailto:oilandgasamericas@lr.org)

### Asia

Alastair Jones  
Lloyd's Register Asia  
**T** +65 (0)6891 7268  
**M** +65 (0)9129 4011  
**E** [oilandgasasia@lr.org](mailto:oilandgasasia@lr.org)

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September 2008



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