

HSE Information Sheet

Offshore Installations (Safety Case) Regulations 2005 HSE's involvement in the design and construction process (including processing of design notifications)

Offshore Information Sheet No 11/2007

Introduction.....	2
Stages of the design process.....	2
The legal framework.....	3
HSE's milestones in the design process.....	4
The evolution of HSE's inspection plans.....	4
Conclusions.....	5
References.....	5
Further information.....	6

Introduction

Offshore operators are turning to increasingly innovative technical solutions to allow economic exploitation of the UK's remaining oil and gas reserves. Such designs pose challenges for regulators, as well as operators who become legal duty holders. HSE is keen therefore to carry out early interaction with the designers to ensure both project and safety risks are kept as low as is practicable.

This document presents a framework for HSE's involvement in the processes associated with the design and construction of an offshore installation. The 2005 offshore safety case regulations (SCR05)¹ introduced the new requirement for a design notification in regulation 6. This design notification is the earliest statutory requirement for HSE involvement. However HSE would generally wish to be involved from the earliest stages of a project i.e. before the formal submission of the design notification. This is because there are clear health and safety benefits in addressing design matters at the earliest stage possible. There are also of course potential financial benefits for the duty holder in resolving any issues with HSE at the earliest possible opportunity.

HSE has both allocated focal point inspectors and specialists who need to be informed of developments during the design process. HSE will manage its involvement to bring appropriate resources to participate in interactions with duty holders. To do so, we will actively be seeking co-operation from duty holders.

Previous examples of good co-operation between HSE and duty holders have allowed HSE to advise of relevant technical and regulatory information. Examples of such information include data on green seas loading and wave slam from Joint Industry Projects, as well as information available through UK and non-UK regulatory and industry bodies. Furthermore HSE has discussed model test plans at an early stage with some duty holders and has thus been able to satisfy itself of the adequacy of the programme before the tests were carried out. HSE is of course also prepared to provide advice on the interpretation of regulatory requirements.

Stages of the Design Process

The main stages in the design and construction process might be classified as:

1. Field development proposals
2. Concept design evaluation
3. FEED studies (front end engineering design) i.e. conceptual topside layout and substructure
4. Detailed engineering design
5. Construction (including transport and installation)

6. Hook-up (i.e. pre-commissioning)
7. Commissioning
8. Operation
9. (Later) possible subsequent major design modifications

HSE would wish to be involved in all of these stages, as decisions affecting health and safety are taken throughout the process.

There have been a number of documents published by industry and HSE addressing safety in design either specifically or in part. For example HSE's assessment principles for offshore safety cases² and the detailed topic guidance (Gascet)³ both contain relevant information for designers, as does the IP/UKOOA guidance document⁴. Specific topics such as inherent safety have also been addressed⁵. There has also been previous internal HSE guidance made available on the HSE website⁶. HSE has also published a suite of documents addressing the ALARP principle, one of which specifically addresses ALARP in design^{7,8,9}.

The Legal Framework

One objective of the publication of this note is to request that duty holders ensure their process of communication with HSE starts at the earliest opportunity.

Before an operational safety case is submitted, the single statutory requirement under SCR05 is to submit a design notification. However, particularly in the case of an innovative design, if HSE's involvement is limited to the processing of a design notification, there may be limited opportunities for dialogue on design matters.

The guidance to SCR05¹ (L30) explains the purpose of the design notification, the stage it has to be submitted by, HSE's responsibilities in responding to the notification and the powers that HSE has to acquire relevant documents and information.

Thus L30 paragraph 137 explains that operators of new production installations have to send a design notification early enough to allow them to take account, in the installation design, of any health and safety matters raised by HSE within 3 months of sending the notification. An operator should not finalise the design before considering any HSE comments identified in that 3 months. The latest time a design notification can be submitted is the time that the licensee submits to DTI for field development approval.

Should a duty holder be unwilling to act on HSE's comments, the sanction HSE possesses is to hold out the possibility that the operational safety case would not be accepted. It would be unfortunate if such an eventuality occurred and such a prospect should perhaps be seen as a potential failure by both sides.

HSE realises that duty holders have to make decisions about the installation through all the design and construction stages. The time of submission of the design notification is thus inevitably a compromise. When the design notification is submitted it may either be after some decisions have been taken, or too long before others are taken for relevant details to be available.

HSE's response to these practical difficulties that will otherwise be faced by duty holders is therefore a process of involvement between HSE and the duty holder that extends throughout the design and construction process.

HSE does have specific statutory powers to obtain documents that are considered relevant to the preparation of the safety case, for example SCR05 regulation 15(4) applies after the submission of a design notification. The general powers of the Health and Safety at Work etc Act Section 20 also apply. However, HSE does not anticipate frequent use of these provisions; the intention of involvement at the design stage is to minimise the subsequent possibility that HSE will raise objections to the operational safety case on safety grounds. In this context, HSE would hope that duty holders would see the process of HSE involvement as 'de-risking' the design process.

HSE's Milestones in the Design Process

HSE has always encouraged duty holders to engage in dialogue from the earliest stages of the design process. This dialogue should continue and will be increasingly important, particularly for innovative designs.

HSE has formal milestones for response to the duty holder after the design notification and also during and after the operational safety case assessment stages. However at other appropriate points (and in particular at earlier stages) the duty holder will be kept informed of HSE's developing views. This will normally be by letter. Such letters will be sent to the duty holder by an inspector allocated as the focal point contact. These letters will contain the appropriate advice from the relevant focal point and specialist inspectors.

The evolution of HSE's Inspection Plans

As with operating installations, HSE will maintain an 'intervention plan' that will describe HSE's future intentions with respect to inspection of the duty holder's project. This will build on information received and will represent HSE's view of the important technical and managerial issues that are affecting the potential safety of the installation.

At the point of safety case acceptance, the intervention plan developed throughout the design process will be combined with any inspection topics that have arisen as a result of the safety case assessment. This will form the HSE intervention plan for the initial years of operation.

HSE's intervention process once operation has commenced is outside the scope of this document.

Conclusions

HSE wishes to use the opportunity presented by the introduction of the 2005 safety case regulations to work closely with duty holders during the design and construction phases of new offshore installations. The safety (and financial) benefits that can accrue with such early interaction are obvious; resolving design matters is better, easier and cheaper if done early in a project than if done after significant work has been performed.

HSE therefore proposes to work with duty holders during the various design and construction stages, providing advice where necessary. This includes, but is not limited to, the formal response made after the submission of the design notification.

References

- 1 A guide to the Offshore Installations (Safety Case) Regulations 2005
L30 HSE Books 2006 ISBN 0 7176 6184 9
- 2 Assessment principles for offshore safety cases (APOSC)
<http://www.hse.gov.uk/offshore/aposc190306.pdf>
- 3 Guidance for the topic assessment of the major accident hazard
elements of safety cases
<http://www.hse.gov.uk/offshore/gascet/gascet.pdf>
- 4 Guidance for safer design of offshore installations: an overview
(IP/UKOOA) published by the energy institute 2005 ISBN 0 85293 446
7
- 5 Improving inherent safety HSE Research Report OTH 96 521HSE
Books 1996 ISBN 0717613070
<http://www.hse.gov.uk/research/othpdf/500-599/oth521.pdf>
- 6 HSE Internal Semi Permanent Circular on Design management 2002
available at <http://www.hse.gov.uk/foi/internalops/hid/spc/spcenf14.pdf>
- 7 Principles and guidelines to assist HSE in its judgements that duty
holders have reduced risk as low as reasonably practicable
<http://www.hse.gov.uk/risk/theory/alarp1.htm>
- 8 Assessing compliance with the law in individual cases and the use of
good practice <http://www.hse.gov.uk/risk/theory/alarp2.htm>
- 9 Policy and Guidance on reducing risks as low as reasonably
practicable in Design <http://www.hse.gov.uk/risk/theory/alarp3.htm>

Further Information

Health and Safety Executive

Hazardous Installations Directorate

Offshore Division

Lord Cullen House

Fraser Place

Aberdeen

AB25 3UB

Tel 01224 252500

Fax 01224 252648

This information sheet contains notes on good practice which are not compulsory but which you may find helpful in considering what to do.