



IADC
NORTH SEA
CHAPTER

International Association of Drilling Contractors

North Sea Chapter

DIVING

Guidance on

MODU/MOU Safety Case Content

Revision	Amendment	Date
Issue 2	Details of requirements for a Diving Competent Person [para after g) on page 7 and item 7 on page 11]; MAH clarification of bowtie requirements [5.1 and 5.2]	30 Sept 2019

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1. Abbreviations

Abbreviation	Abbreviation Description
ACoP	Approved Code of Practice
APOSC	Assessment Principles for Offshore Safety Cases
CA	Competent Authority
CMAPP	Corporate Major Accident Prevention Policy
CMID	Common Marine Inspection Document (IMCA)
DDC	Divers Decompression Chamber
DP	Dynamic Positioning
DSV	Diving Support Vessel
DVIS	Diving Information Sheet
DWR	The Diving at Work Regulations 1997
ENF	Emergency Notification Flowchart
FMEA	Failure Mode Effect Analysis
FRC	Fast Rescue Craft
HAZID	Hazard Identification
HIRA	Hazard Identification and Risk assessment
HSE	Health and Safety Executive
ICP	Independent Competent Person
IMCA	International Marine Contractor's Association
IOGP	The International Association of Oil & Gas Producers
MAH	Major Accident Hazard
MAR	The Offshore Installations and Pipeline Works (Management and Administration) Regulations 1995
MODU	Mobile Offshore Drilling Unit
MOU	Mobile Offshore Unit e.g. accommodation
O&G	Oil and Gas
OIM	Offshore Installation Manager
OSDR	Offshore Safety Directive Regulator
OCIMF	Oil Companies International Marine Forum
OVID	Offshore Vessel Inspection Database (OCIMF)
PFEER	Prevention of Fire and Explosion, and Emergency Response Regulations 1995
PTW	Permit to Work
ROV	Remotely operated underwater vehicle
SECE	Safety & Environment Critical Equipment
SEMS	Safety & Environmental Management System
SCR 2005	The Offshore Installations (Safety Case) Regulations 2005
SCR 2015	The Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015
TUP	Transfer Under Pressure
UKCS	United Kingdom Continental Shelf

2. Introduction

This Guidance has been developed by an International Association of Drilling Contractors (IADC) North Sea Chapter (NSC) Work Group.

The guidance document also incorporates amendments and feedback provided by other NSC members, and has had input from the Health and Safety Executive (HSE).

This document describes and provides guidance that could be used by a diving competent person to assist an IADC North Sea Chapter member (duty holder) in completing diving topic assessments for a safety case submission.

2.1 Objective

The objective of this Guidance is to **assist duty holders in making appropriate provision for diving operations** in their Safety Cases, and by so doing, to reduce the risks from major accident hazards associated with diving.

This document should be read in conjunction with the main HSE OSDR Guidance and Procedures for the Assessment of Safety Cases, and the assessment principles contained within the APOSC. There are some useful links provided at the end of this document.

3. Relevant Legislation

An offshore installation is defined in regulation 3(1) of MAR as a structure used for any one of a number of activities related to the exploitation of oil and gas resources in 'relevant waters', meaning tidal waters and parts of the sea in or adjacent to Great Britain, the territorial sea itself and any designated area of the continental shelf.

The Health and Safety at Work etc. Act 1974 is the primary legislation for all at work activities undertaken in the United Kingdom. For the purpose of this document we shall be referring to the following regulations and industry guidance:

3.1 The Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015

The Competent Authority (CA) will take a considered view on which elements of a particular safety case should be examined in greater depth and which should not. The key criterion will be whether a safety case contains sufficient information to enable the Competent Authority to make a decision on acceptance. To allow diving to be included in a Case a duty holder will need to satisfy the Diving Topic Assessment elements contained in the Diving Assessment Template. Specific guidance on the assessment of diving topics for duty holders can be found on the OSDR website: <http://www.hse.gov.uk/osdr/process-framework.htm>

MODU & MOU operators, as the owners of a non-production installation are defined as the main duty holder under The Offshore Installations (Safety Case) Regulations 2005 & the Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015. SCR 2005 & 2015 Regulation 2 states that:

'The owner is the person who contracts with the licensee/field operator to use the installation for oil and gas related activities and is in direct operational control of that activity therefore it is the duty holder that has the duty to manage diving operations from their installation'.

SCR 2005 & 2015 Regulation 2 defines Diving as a 'major accident hazard'. SCR2015 Regulation 16 (*SCR 2005 Regulation 12*) requires that all hazards with the potential to cause a major accident have been identified and all major accident risks have been evaluated and measures taken to control those risks.

A safety case must provide particulars of all the reasonably foreseeable operations and activities that are intended to be undertaken, or may need to be undertaken, during the operating lifetime of the installation. This includes activities relating to all connected wells, any occasional activities such as major maintenance projects or diving work and any planned construction or alteration projects. The safety case must also take into account the implications for health and safety on the installation of any likely activities involving other vessels e.g. nearby diving support, supply and service vessels, shuttle tankers, helicopters or other installations. Particular attention should be paid to any potentially hazardous simultaneous activities, and any novel techniques.

If diving is not going to be undertaken, a paragraph should be included in the relevant section that states (example):

'Diving will not be allowed from this installation, either installation based or as a connected activity'

Note: A connected diving activity would be any diving which takes place within the installation's safety exclusion zone from any diving platform be it a DSV, a temporary diving system on an Installation, or diving daughter craft.

3.2 The Diving at Work Regulations 1997

These Regulations apply to all diving activities regardless of whether they are inland, inshore or offshore. A duty holder has the duty to ensure compliance with DWR 1997 and in particular requires that every person who to any extent is responsible for, has control over or is engaged in a diving project or whose acts or omissions could adversely affect the health and safety of persons engaged in such a project, shall take such measures as it is reasonable for a person in his position to ensure that the regulations are complied with.¹

3.3 Prevention of Fire and Explosion, and Emergency Response Regulations

These Regulations define the preventive and protective measures necessary for managing fire and explosion hazards, and for emergency response. PFEER includes requirements for the prevention, detection, control and mitigation of fire and explosion. It requires arrangements for detecting and responding to other emergencies, such as loss of stability, ship collision, and helicopter ditching near an installation, although there is no requirement to prevent such occurrences. It covers major accident and other hazards, although the assessment provisions are confined to the former. Diving operations undertaken directly from an installation would need to comply with regulation 5, 8, & 15.

¹ The Diving at Work Regulation 1997 Regulation 4.

3.4 Assessment Principles for Offshore Safety Cases

APOSC sets out the principles against which HSE assess safety cases; it represents the experience on which OSDR draws when assessing safety cases. The principles should be widely known by industry managers, technical experts and employees, enabling a common understanding of the process.

3.5 The Commercial Diving Projects Offshore (ACoP) L103

The ACoP text and associated guidance provide practical advice on how duty holders can comply with the requirements of the Diving at Work Regulations. It applies to all diving projects outside the United Kingdom territorial waters adjacent to Great Britain and includes all diving operations in UK designated areas of the continental shelf undertaken in connection with offshore installations, energy structures, emerging energy technologies, wells and pipeline works.

The duty holder will need to ensure that they can meet the requirements outlined in Regulation 4 of the Diving at Work Regulations.

3.6 IMCA Guidance

IMCA represents companies and organisations engaged in delivering offshore, marine and underwater services. IMCA produce guidance documents, codes of practice, industry guidelines and audit templates. Membership of IMCA, and compliance with its standards and guidance documents, is a requirement imposed by the majority of Industry stakeholders in the United Kingdom.

3.7 IOGP Guidance

IOGP Represents a number of O&G Operators with their stated goal: “the voice of the global upstream industry whose goal is to improve environmental and social performance.” IOGP also produce Guidance documents for certain aspects of diving operations, for example, for the Use of Oxy-thermic cutting equipment underwater (IOGP 471) and for “Performance of Saturation Diving Emergency Hyperbaric Evacuation and Recovery” (IOGP 478).

4. Diving Management – Safety and Environmental Management System.

The installation safety case must satisfy all the requirements of the HSE ‘Diving Assessment Template’. It is in the duty holder’s interest to provide accurate and unambiguous information. Inclusion of the appropriate conditions of audit and review will allow the duty holder to meet the conditions of assurance required by the regulations.

For the purpose of safety cases diving can be split into two main types of diving operation methods under each of which are a variety of techniques. For safety cases these are broadly categorised as;

- Connected activity undertaken from a diving support vessel within the Safety Exclusion Zone of the installation or relating to connected subsea infrastructure out with the Exclusion Zone, and which are controlled by the Permit to Work Systems of the Installation (See section 6).
- Installation based diving operations: these are operations being undertaken directly from an installation (See section 6.1).

Developing a specific diving policy should provide a duty holder with a consistent approach to the management of diving operations and ensure that they have the correct organisational arrangements in place to comply with relevant health and safety legislation and best industry practice. It would typically include:

- a) A statement of compliance with DWR 1997 and associated guidance.
- b) A description of roles and responsibilities in connection with diving matters including but not limited to ownership and management of the diving policy, SEMS/operations standard or equivalent.
- c) A description of the system used to procure diving services; management of diving operations undertaken directly by the duty holder, or by third-parties whose operations will fall under the control of the duty holder.
- d) A description of the system used to procure diving support vessels either by the duty holder, or by third-parties intending to bring diving activities into their area of authority. This should include a section on how they are appropriately audited and confirmed as fit for purpose for the work scope, and fully compliant with the applicable regulations and guidance.
- e) A description of the system used to ensure that the diving operation has been fully and properly risk assessed and that systems are in place to ensure that the resultant controls are complied with during the project.
- f) A description of the system used to ensure that document control is properly managed, and that appropriate systems are in place for control and distribution of all diving project documentation such as procedures, HIRAs, ENF's (Emergency Notification Flowcharts), charts, drawings and reports.
- g) A description of the system used to ensure that appropriate levels of competence and manning are applied to offshore representation on diving projects. This applies equally to both engineering and diving disciplines.

Typically, when a scope of work identifies diving, then it is HSE's expectation that the duty holder will have access to a suitably qualified diving, marine (or both when a project requires), competent person(s) (see section 7 below) to assist in all of the preceding issues in this section. Their role will be to advise on these issues and provide expertise in support of the duty holder onshore MODU/MOU Manager and the OIM.

It is important for the duty holder to provide all relevant information about the hazards associated with the installation to the diving contractor/client operator so that a suitable and sufficient risk assessment is undertaken before the start of the project/operation.

The production of a suitable bridging document which will address the findings of the duty holders' combined operations risk assessment and demonstrates how each duty holder's SEMS will integrate to ensure major accident risk will be adequately managed.

4.1 Combined Operations - Diving

Safety cases made under both SCR 2005 & SCR 2015 are required for all installations operating, or to be operated, in external waters. The management of major accident hazards and the reduction of the associated risks are the primary aim of the regulations. Each installation must include and have an accepted case for diving within their individual

safety cases before diving operation can commence within their 500m safety zone, even if that diving operation is being undertaken on behalf of another duty holder and in relation to that duty holder's installation.

When installations engage in combined operations, a notification is presented to the HSE that provides details on the specific features of such an operation. Following acceptance, the duty holder must ensure that the installation is operated in conformity with the SEMS, the verification scheme and other arrangements described in the safety case. The notification then supplements the generic descriptions with details of the actual operations to be undertaken. If the generic material in individual safety cases is sufficiently thorough there will be no need for duty holders to revise them. However, in the event that an installation is to take part in a type of combined operation not foreseen in the safety case, a material change under regulation 24(2) will be needed.

Where the combined operation involves a production and non-production installation, the operator of the production installation shall take primacy with regard to emergency response. As part of the combined operations a bridging document should be developed which will address the findings of the duty holders' combined operations risk assessment and provide a demonstration how each duty holder's SEMS will integrate to ensure major accident potential will be adequately managed. This would not be possible if the duty holder of a non-production installation did not have a SEMS that covered diving operations.

As discussed in previously in section 4, diving operations undertaken from a DSV that is not an installation and therefore does not have a safety case would be defined as a connected activity.

5. MAH Risk Assessments to be included in the Safety Case.

Diving is defined as a MAH within SCR 2005 & SCR 2015.² A key requirement of the safety case regulations is the evaluation of major accident hazard risks and the requirement of a systematic use of an appropriate risk assessment and hazard identification³. For each identified major accident hazard the safety case should contain sufficient details on the process adopted.

It would be unrealistic to attempt to include a specific risk assessment that could cover all types of diving operation in the duty holder's submitted safety case. However, a duty holder should decide which method of diving they wish to include in their safety case and provide the following:

5.1 MAH Risk Assessment for Connected Activity

An assessment of the major accident hazards associated with diving as a connected activity would include an assessment on a potential DSV (ship) collision and how the duty holder will verify the suitability and compliance of the diving vessel, plant and equipment. This could be incorporated within the Ship Collision Bowtie.

² SCR 2005 & 2015- Regulation 2 defines diving as a MAH.

³ SCR 2005 Regulation 12 SCR 2015 Regulation 16.

5.2 MAH Risk Assessment for Installation Based Diving

This should, in addition to all the generic diving factors, specifically assess the interfacing of diving equipment onto the installation, the effect it would have on safety critical equipment and PFEER performance standards. This may require a specific diving Bowtie.

5.3 HIRA Process

The duty holder should include a paragraph that refers to their project specific risk assessment process to ensure that all other project specific risks will be assessed as they are identified.

6. DSV (or similar) operating as a connected activity.

Diving Support Vessels (DSV) that will work as a connected activity within the installation's safety exclusion zone should be audited and assessed by a suitably-competent person or persons to provide assurance that they are suitable for the work, and fully compliant with applicable regulations and industry guidance. Some key documents to include are:

- a) IMCA Common Marine Inspection Document (CMID), OVID or equivalent
- b) DP FMEA
- c) DP annual trials
- d) DP records including those for DP incidents and field entry trials
- e) Vessel specific PTW system

All diving activities shall be managed in a manner to comply with the Diving at Work Regulations 1997, its associated ACoP and industry guidance. In addition, the duty holder should ensure that:

- a) There is a robust assessment process, that ensures that equipment and vessel audits have been undertaken and certified fit for purpose according to recognised industry standards and guidance.
- b) Any party intending to conduct diving operations into the Exclusion Zone of the Installation are, themselves, suitably competent and fit to procure and manage diving operations.
- c) At the project stage, identification of the hazards that the installation brings to the divers and the hazards that the DSV brings to the installation are formally identified at a HAZID. This may be undertaken by the Client Operator (if working on their assets) or directly by the MODU/MOU duty holder if the diving contractor is directly employed.
- d) All diving operations are controlled under an operational work scope supported by a project dive plan which identifies and details the work to be undertaken, and how the project will execute the diving operations. The operational work scope is formally agreed and signed by all parties prior to the work being executed. If there is a requirement to deviate from the work scope, or procedures, in **ANY** way, this will be subject to a management of change procedure.
- e) A bridging document will be put in place before the start of the diving operation to align SEMS of all parties involved in, affected by, or affecting the diving operation.

- f) Diving operations under its control are authorised by a PTW by the OIM before diving commences. Any simultaneous or combined operations will be identified and assessed prior to the issue of the diving permit.

Consideration should also be given to work undertaken within the safety zone of an installation with an anchor catenary. This has not been included in the example text contained in Appendix 1, but a summary of how such an operation would be managed should be included.

6.1 Installation Based Diving

If an installation-based diving intervention is needed to support an operation, consideration will need to be made on what major hazard/risks might be presented by positioning a diving system (saturation, TUP, air or nitrox) on an offshore installation. The following issues, as a minimum, should be considered in a joint risk-assessment between the diving contractor and the installation operator (appropriate risk control measures should be put in place):

- a) Extra loading – could cause structural failure/stability issues.
- b) Oxygen (either pure oxygen or oxygen-enriched air) quads – fire/explosion risk and explosive debris.
- c) Pressure systems – uncontrolled release of pressure (includes depressurisation of a sat system leading to death of divers).
- d) Exclusion of unsuitable electrical equipment which may cause incendive sparks.⁴
- e) During mob and demob, lifting operations may take place over or in the vicinity of sensitive plant and equipment (safety and environmental critical plant). Also welding down of plant is a consideration.
- f) System failure may compromise fire walls.
- g) Position of system may impede escape and abandonment arrangements (by blocking escape routes for example).
- h) Installation fire deluge systems may need enhancing to cover the dive system. Deluge cover for other safety critical plant and equipment may suffer degradation as a result.
- i) Shared services – what impact could dive systems have on “safety and environmental critical plant” (SECs) or “specified plant”? Do these systems introduce safety critical temporary equipment or specified plant? If they do, they must be made part of the installation’s verification scheme so that the Independent Competent Person (ICP) is made aware of this and has the opportunity to comment. The ICP should always be informed of any intention to conduct installation-based diving operations. Equipment used by contractors may need to be included in verification arrangements.

⁴ Note: In areas where the ignition of dangerous substances could affect the safety of people, measures must be introduced to avoid ignition sources occurring or being brought into those areas. The measures will include selecting and installing appropriate electrical and non-electrical equipment that has been designed to be safe in hazardous areas (zones 0, 1 and 2 – see BSEN 60079-10:2003).

The essential preliminary to developing an effective verification scheme is the appropriate identification of the SECEs for the installation. SECEs are defined in regulation 2(1) of the safety case regulations. Work done to identify hazards in preparing the safety case will assist this process.⁵

Diving operations that are conducted directly from the installation expose the divers to increased risks in regard to their ability to successfully escape or evacuate from an installation in the event of an emergency. Planned decompression⁶ significantly reduces the diver's ability to meet the installation's 'Escape and Evacuation Performance Standard'. Diving projects can be planned so that decompression stops are not required. This should be reflected in the safety case.

In order for the duty holder to make suitable arrangements for all persons to leave the installation safely in the event of an emergency, they must take into consideration the amount of time it would take a diver to leave the underwater worksite and travel back through the water column at the correct ascent rate, be recovered through the air gap back to the deck of the installation, and on to the muster station.

There is the potential for the use of mixed gas bell diving, including saturation diving techniques and types of TUP systems that could be installed onto an installation whilst it was operating in the UKCS. The introduction of this type of equipment would require the duty holder to submit a material change due to the technical nature of such equipment and the significant effect it has on emergency evacuation plans.

7. **Diving Competent Person**

The Drilling Contractor (duty holder) should ensure that they have access to a diving advisor /competent person that aligns with the organisations CMAPP and the control of major accident hazards; this advisor can be in-house or third party. It is for the duty holder to decide what is the correct level of competence they require dependent on the type of project / scope of work they are entering into. For example, if a diving vessel was to operate in an anchor pattern there may be a need for Marine as well as Diving competence.

The diving competent person should have knowledge of the local regulations and have a suitable offshore diving qualification, relevant experience in the UKCS and an operational background. This would, assist the duty holder in meeting the requirements for the management and control of major accident hazards by:

- Reviewing work scopes that include diving
- Attending any risk assessments together with, or on behalf of the duty holder that highlight diving within the project workscope
- Ensuring that any diving management system that forms part of the duty holders SEMS remains current and fit for purpose
- Reviewing any audits undertaken by third parties to ensure they are fit for purpose

⁵ A safety case will describe a range of major accident hazard scenarios which will help determine the suitability of the SECEs

⁶ mandatory stops in the water or deck chamber to allow gases in the diver's tissues to come out of solution at a safe rate)

Appendix 1 - Example of Safety Case Wording for Diving Operations carried out as a Connected Activity

This should be used as guidance. The OSDR expectation would be that this would enable the duty holder to meet the requirements needed by the safety case. The duty holder should note that the OSDR will inspect a diving operation based on the terminology contained within the case.

Installation based diving operations will not be allowed to be undertaken directly from the installation. Any diving operations will be conducted as a connected activity from a Diving Support Vessel or similar.

<insert name> may find that a third party requires conducting a diving operation, from a Diving Support Vessel, within the safety zone of the Installation. Typically, this would be for the purposes of maintenance of existing infrastructure for example, and may be procured and appointed by an O&G Operator. Such third parties would most likely be the <insert name> client company, over whose asset the <insert name> is located. DSV operations may include, but may not be limited to the activities listed below;

- a) ROV & survey
- b) Inspection repair and maintenance of subsea infrastructure
- c) Surface orientated air/nitrox diving
- d) Mixed gas closed-bell saturation diving

The <insert name> Diving Operations Management System, Ref <insert name>, defines the responsibilities and procedure for management of, and co-operation with, a diving contractor and operator. All diving activities are managed in a manner to comply with the Diving at Work Regulations 1997 and its associated ACoP and industry guidance, normally that published by IMCA or the IOGP.

The <insert name> shall firstly ensure that any party intending to conduct diving operations within the Exclusion Zone of the Installation are, themselves, suitably competent and fit to procure and manage diving operations. The duty holder shall also ensure, by a robust verification process, that equipment and vessel audits have been undertaken and certified fit for purpose according to regulations and recognised industry standards and guidance.

Identification of the hazards that the installation brings to the divers and the hazards that the DSV brings to the installation will be formally identified at a HAZID. This may be undertaken by the operator (if working on their assets) or directly by the duty holder if the diving contractor is directly employed. In each of the scenarios we will aim to:

- a) Ensure that information about the hazards associated with the installation are provided to the contractor/operator so that a suitable and sufficient risk assessment is undertaken before the start of the project/operation.
- b) Discuss any hazards from work underway on the MODU/MOU, and any other activities that may occur during the period of the diving activity.
- c) Review of operations to identify any credible emergency conditions, to ensure that there is time to recover or move divers to a safe location.

All diving operations are controlled by approved and signed-off procedures for the work scope, which are supported by a HIRA and dive plans which identify and detail the work to be undertaken, along with all the risk controls. If there is any requirement for deviation from approved procedures, this will be discussed with all parties beforehand, and subjected to the agreed management of change process.

A major accident risk assessment for diving has been conducted and is included in section *<insert reference>* of the safety case.

A bridging document will be put in place before the start of the diving operation, to align the *<insert name>* SEMS with those of the diving contractor and any other parties who have responsibilities for the safety of the diving operation, or whose assets might be affected by it. That would include the third-party client of the diving contractor, where relevant, or any other parties with proximate assets such as vessels or installations, the bridging document should as a minimum contain the following:

- a) Provide clear presentation of the organisational structure of all connected parties and their relationships within the activity.
- b) Ensure that roles and responsibilities of all parties are clear.
- c) Define key processes such as risk assessment, control of the diving operation.
- d) Define PTW protocols.
- e) Define primacy of the parties to the document, during normal operations and through all credible emergency scenarios.
- f) A list of normal and emergency contact details for all offshore assets, also for all the associated onshore personnel and entities that have responsibilities under the Bridging Document.
- g) Provide an ENF for posting in key locations at all affected sites and assets.

The *MODU/MOU <insert name>* Manager and OIM will be supported by a suitably qualified and experienced, independent, diving specialist, provided by the duty holder. The roles and responsibilities of this person will be contained in the duty holder's management document *<insert reference>*

The OIM will ensure the nominated person from the diving contractor is informed of any changes to the daily operations that may affect the diving project. There will be no tubular lifting operations or vessel unloading operations whilst the divers are in the water.

Where the *MODU/MOU <insert name>* is positioned at a fixed production platform, the bridging document will also include the platform operator.

Diving activities under the control of the duty holder shall be authorised by a Permit to Work by the OIM before diving commences. Any simultaneous or combined operations will be identified and assessed prior to the issue of the diving permit.

Combined operations involving diving will be undertaken in many cases when the *<insert name>* is operating at a fixed platform. Diving activities may be carried out with the diving contractor under contract to the platform operator. In this situation the fixed platform OIM will manage the

interface with the diving contractor. The <insert name> OIM will cooperate with the fixed platform OIM to ensure awareness of work underway on the <insert name>, and any risk this provides to divers. Where considered necessary, the <insert name> OIM will countersign platform Permits to Work for the diving activity.

Appendix 2 - Example of Safety Case Wording for Installation Based Diving

This should be used as guidance. The OSDR expectation would be that this would enable the duty holder to meet the requirements needed by the safety case. The duty holder should note that the OSDR will inspect a diving operation based on the terminology contained within the case.

The <insert name> does not have any fixed arrangements for the support of diving operations, and none will be fitted to the <insert name> on a permanent basis.

There will be no planned decompression during diving operations that are undertaken directly from the installation.

Where an air diving spread is planned to be installed on the <insert name>, a joint risk assessment will be carried out onshore involving appropriate <insert name>, operator and diving contractor personnel to ensure that the equipment can be safely fitted to the <insert name>, and that appropriate safeguards are in place to control risks to the <insert name> and the diving spread. The risk assessment will include issues such as;

- a) Suitability of the <insert name>deck for loads imposed.
- b) Fire and explosion risk associated with oxygen quads and other pressurised systems.
- c) Any implications of electrical equipment on the <insert name> hazardous area zoning.
- d) Vulnerability to dropped objects or crane operations.
- e) Risk from high pressure or hydrocarbon lines.
- f) Potential for impairment of escape routes.
- g) Requirements for service connections to the <insert name>, including required reliability of such services.

All diving systems (both permanent and temporary) mounted on the installation will be assessed for inclusion in the verification schemes as required by document number <insert reference>.

Management arrangements contained within document number <insert reference> will ensure that the ICPs overseeing the installation's verification scheme is consulted prior to the fitting of temporary dive system. The final installation and verification will be undertaken in accordance with the installation's safety and integrity procedures.

The <insert name> Manager and OIM will be supported by a suitably qualified and experienced, diving specialist, provided by the duty holder. The roles and responsibilities of this person will be contained in the duty holder's management document <insert reference>.

The diving contractor is responsible for the inspection and maintenance of all diving equipment under an appropriate planned maintenance system. The duty holder must verify that the diving contractor has completed an assurance programme on the system to ensure its fitness for purpose for the work, and its compliance with all relevant legislation and industry guidance.

The use of mixed gas closed bell diving including saturation diving techniques and TUP systems, that could be installed onto an installation whilst it is operating in the UKCS, will require a material change to the Safety Case due to the associated risks of such equipment and the potential effect it has on the emergency evacuation plans.

Diving is not conducted from this installation on a regular basis. Given the nature of the type of operations that can be undertaken the duty holder will work with the diving contractor to develop a suitable performance standard for evacuation which will include as a minimum:

- a) consideration of the amount of time it would take a diver to leave the underwater worksite and travel back through the water column at the correct ascent rate, be recovered through the air gap back to the deck of the installation and on to the muster station.
- b) Confirmation that the diving contractor has emergency plans for the evacuation of the divers' decompression chamber if it was being used in an emergency.
- c) The possibility of using the standby vessel FRC for the rescue of divers in the water, in the event that the divers cannot be brought back to the installation during an emergency.

Appendix 3 - Useful Hyperlinks

1. [The Diving at Work Regulations 1997](#)
2. [Commercial Diving Projects Offshore Approved Code of Practice L103](#)
3. [The International Marine Contractors Association \(IMCA\) guidance](#)
4. [Association of Diving Contractors guidance documents](#)
5. [Oil & Gas Producers guidance documents](#)
6. [The Diving Medical Advisory Committee](#)
7. [Health & Safety Executive diving information sheets](#)
8. [Health & Safety Executive diving web page](#)