

DIVING GUIDELINES 2018

Guidelines for complying with Chapter 4 (Diving) of the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009, and equivalent State and Northern Territory legislation where powers have been conferred.

Important Notice

A revision to these guidelines has been undertaken by NOPSEMA to reflect updated references to the applicable legislation in the *Offshore Petroleum and Greenhouse Storage Act 2006* and the Offshore Petroleum and Greenhouse Storage (Safety) Regulations 2009 and, specifically, the requirements of Chapter 4 of the Regulations – Diving, and the requirements for preparing a diving safety management system (DSMS).

The structure and format of the document mirrors the previous edition of these guidelines (Diving Guidelines 2003) but the content has been updated to provide guidance on current legislation. Following any feedback received, NOPSEMA intends to conduct a second, more wide ranging review of these guidelines in the second half of 2018. Further information will be provided on the NOPSEMA website.

To provide feedback or for further information on these guidelines, please contact the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA):

- Telephone: +61 (0)8 6188 8700, or
- e-mail: information@nipsema.gov.au.

Diving contractors who are preparing a DSMS are also advised to make themselves familiar with additional guidance available at www.nipsema.gov.au.

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RECORD OF CHANGES

REVISION DATE	CLAUSES AFFECTED	OPERATIVE DATE	CHANGE NUMBER
03/09/02	First Edition.	3/09/02	1 st Edition
27/03/04	Second Edition; Amendments from industry and government.	27/03/03	2 nd Edition
18/06/2018	Third Edition: Updated to reflect requirements of Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009 (Chapter 4 – Diving).	18/06/18	3 rd Edition

1. INTRODUCTION

1.1 GENERAL

1.1.1 REGULATIONS AND GUIDELINES

- 1.1.1.1 This Guideline has been prepared under regulation 4.4(1) of the Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009 (the Regulations) and is considered to be in force from the date of publication of this revision (18 June 2018).
- 1.1.1.2 The Guideline is structured so that a particular regulation and/or sub regulation appears in bold italics (boxed and highlighted), followed by plain English guidance that explains (and often amplifies) what needs to be done to comply with that provision, the meaning and import of that provision.
- 1.1.1.3 The regulations require the formulation of a diving safety management system (DSMS) by diving contractors. Diving contractors are required to submit and request the acceptance of the DSMS by the regulator. Once the DSMS is accepted and a contract is agreed with an operator (client), the diving contractor and operator together prepare a diving project plan. The operator must approve the diving project plan for use in the execution of works by/for the operator. The DSMS and the diving project plan (DPP) form the rules by which the diving project must proceed. Any works conducted that do not comply with the DSMS and the diving project plan will be in breach of the diving regulations. Table 1 provides a summary of these requirements, which are explained throughout this document. The relationship between the Regulations, its governing legislation, the DSMS, DPP and this guideline is illustrated in Figure 1 'Overview of the Australian Legislative Framework'.

Table 1 - Overview of the Australian Legislative Framework in relation to diving

Document	Regulatory requirement
Guidelines	Guidelines (this document): A DSMS must meet the minimum standards set out in guidelines made by NOPSEMA (see Section 2.3.2).
Diving safety management system (DSMS)	Regulations require: <ul style="list-style-type: none"> • Diving contractor to have DSMS. • DSMS to be accepted by NOPSEMA. • DSMS to be implemented by the diving contractor.
Safety case	Regulations require: <ul style="list-style-type: none"> • Operator to prepare safety case including formal safety assessment of diving related hazards. • Safety case to be accepted by NOPSEMA. • Safety case to be implemented by the operator.
Diving project plan (DPP)	Regulations require: <ul style="list-style-type: none"> • Diving contractor to prepare DPP. • Operator to approve DPP (or if no operator, NOPSEMA to approve DPP). • DPP implemented. • NOPSEMA may inspect DSMS, safety case, DPP and their implementation.

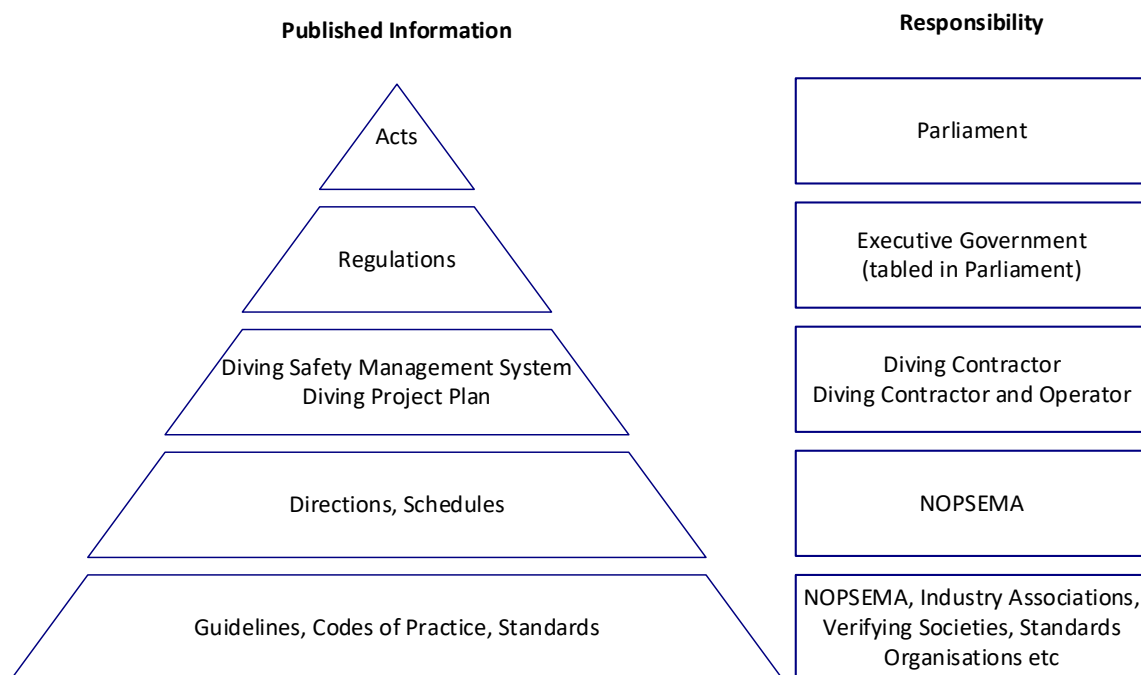


Figure 1: Australian Legislative Framework (Diving Regulations)

1.1.2 HEALTH AND SAFETY LEGISLATION

1.1.2.1 In Australia, the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* primarily provides that NOPSEMA is the regulator for health and safety (OHS), structural (well) integrity and environmental management of petroleum exploration and development activities in Australia's offshore areas beyond the first three nautical miles of the territorial sea. Similar provisions are conferred on NOPSEMA under other relevant state and Northern Territory legislation as they apply in coastal waters (those areas less than three nautical miles from the territorial sea). As at 1 January 2013 only Victoria has validly conferred structural (well) integrity functions and by default the conferral of OHS functions on NOPSEMA, not including environmental management. While other jurisdictions may consider the future conferral of these functions, it remains the obligation of the duty holder to comply with other relevant state and territory legislation, where applicable.

1.1.3 PENALTIES

- 1.1.3.1 A number of offences are created under the regulations for either doing or failing to do some thing or things. A scale of penalties has been proposed and agreed with the working group. The penalties are expressed as 'penalty units'.
- 1.1.3.2 A penalty unit is used instead of a monetary figure as a matter of convenience by the Commonwealth Government and the *Crimes Act 1914* (section 4AA) provides that the amount of monetary penalties will be stated in the terms of a "penalty unit" in all Commonwealth legislation.
- 1.1.3.3 This means that if the value of money changes radically over time, or the community adopts a different attitude to the severity of offences, only section 4AA of the *Crimes Act 1914* needs to be amended to increase or decrease penalties, not all of the separate pieces of legislation containing monetary penalties.
- 1.1.3.4 It should be noted that all penalties quoted in these regulations are maximum penalties. The actual penalty for any offence is decided by the court.

- 1.1.3.5 The amount of a “penalty unit” is presently set of \$210 For these regulations, as of 2017, the maximum penalties in dollar terms are set at:
- a) For offences committed by operators (100 penalty units) \$21,000
 - b) For offences committed by diving contractors (50 penalty units) \$10,500
 - c) For offences committed by diving supervisors (20 penalty units) \$4,200
 - d) For offences committed by divers (10 penalty units) \$2,100

1.2 USE OF THE GUIDELINES

1.2.1 OUTLINE OF GUIDELINES

- 1.2.1.1 The Diving Guidelines have been developed to five (5) main sections (as detailed below). Section 2 broadly coincides with the regulations:
- a) Section 1 – Introduction
 - b) Section 2 – Regulations and guidance. Which is further sub divided in line with the regulations:
 - (i) Part 1 – Preliminary
 - (ii) Part 2 – Diving safety management systems
 - (iii) Part 3 – Diving project plans
 - (iv) Part 4 – Involvement of divers and members of the work force
 - (v) Part 5 – Safety responsibilities
 - (vi) Part 6 – Diving supervisors
 - (vii) Part 7 – Start-up notices
 - (viii) Part 8 – Diving operations
 - (ix) Part9 – Records
 - c) Section 3 – Diving safety management system (outline)
 - d) Section 4 – Glossary of terms
 - e) Section 5 – Supplementary information sources

1.2.2 ADMINISTRATION OF THE DOCUMENT

- 1.2.2.1 As previously discussed, the Guideline is structured so that a particular Regulation and/or sub regulation appears in bold italics (boxed and highlighted), followed by plain English guidance that explains (and often amplifies what needs to be done to comply with that provision) the meaning and import of that provision.
- 1.2.2.2 Each paragraph of the guideline is numbered. Occasionally paragraphs require further subdivision this will be indicated by numerals and/or letters. This format allows easy reference and continual updating. Users should note however, that page numbers will vary between electronic and printed versions of the manual.
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- 1.2.2.3 When changes are promulgated they will be listed in the record of changes page in the preface to these guidelines.
- 1.2.2.4 Where small changes have been made, between editions/revisions, a change bar (as indicated to the right) will indicate amended paragraphs.
- 1.2.2.5 Throughout these guidelines, for purely grammatical ease, pronouns have been used interchangeably to indicate both 'he' and 'she' or 'his' and 'her' as the case may be.

2. REGULATIONS AND GUIDANCE

2.1 PRELIMINARY

2.1.1 REGULATION 1.1: NAME OF REGULATIONS

Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009

Guidance

- 2.1.1.1 This is self-explanatory. Throughout the remainder of this document they are referred to as the Regulations.

2.1.2 REGULATION 1.2: COMMENCEMENT

These regulations commence on 1 January 2010

Guidance

- 2.1.2.1 These Regulations are Australian Commonwealth law and came into force on 1 January 2010.

2.1.3 REGULATION 1.3: REPEAL

The following regulations are repealed:

- (a) The Petroleum (Submerged Lands) (Occupational Health and Safety) Regulations 1993**
- (b) The Petroleum (Submerged Lands) (Management of Safety on Offshore Facilities) Regulations 1996**
- (c) The Petroleum (Submerged Lands) (Diving Safety) Regulations 2002**

- 2.1.3.1 The various Petroleum (Submerged Lands) Regulations are no longer in force. The *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGs Act) and associated regulations are the current legislation governing diving activities in Commonwealth waters.

2.1.4 REGULATION 1.4: OBJECTS

- (4) An object of these regulations is to ensure that diving to which the OPGGS Act relates is carried out in Commonwealth waters only in accordance with diving safety management systems that have been accepted by NOPSEMA
- (5) An object of these regulations is to ensure that diving safety management systems make provision for the following matters in relation to the health and safety of persons:
 - (a) the identification of hazards and assessment of risks
 - (b) the implementation of measure to eliminate the hazards, or otherwise control the risks
 - (c) a comprehensive and integrated system for management of the hazards and risks
 - (d) monitoring, audit, review and continuous improvement.
- (6) An object of these regulations is to ensure that the risks to the health and safety of persons who carry out diving to which the OPGGS Act relates are reduced to ALARP.

- 2.1.4.1 Three of the six objects of the regulations relate to diving. They provide the overarching objectives that the regulations seek to achieve and that NOPSEMA seeks to achieve through the assessment, inspection, investigation and enforcement of diving operations.

2.1.5 REGULATION 1.5: DEFINITIONS

Guidance

- 2.1.5.1 In the regulations a list of definitions is provided. In these guidance notes the listed is broken up into specific definitions which are contained in this section.

- 2.1.5.2 The definitions in regulation 1.5 are provided to assist the user in interpreting the meaning of specific terms used in or throughout these regulations. They are intended to apply to these specific terms wherever the term occurs within and in the context of these regulations.

Accepted DSMS: a DSMS that has been accepted by NOPSEMA under regulations 4.5 or 4.6.

Guidance

- 2.1.5.3 'Accepted' means that the DSMS has been formally submitted to NOPSEMA and has been assessed by the regulator against the minimum standards of these guidelines and has been formally accepted as meeting the requirements of the regulations.

The Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGS Act).

Guidance

- 2.1.5.4 The OPGGS Act governs petroleum operations offshore beyond three nautical miles from the territorial sea baseline. The territorial sea baseline is usually, but not always, the low water mark. (In contrast, state and Northern Territory legislation governs petroleum operations onshore and as far as three nautical miles seaward of the baseline, referred to as 'coastal waters'). The ACT includes provisions covering the granting of rights to undertake exploration for oil and gas, the drilling of exploratory and production wells, and the development, operation and

decommissioning of oil and gas facilities. Section 782 of the OPGGS Act enables Regulations to be made to regulate petroleum activities, including arrangements for the management of safety. The Commonwealth and the states/Northern Territory jointly administer the PSLA through a Joint Authority arrangement. Each Joint Authority comprises the Commonwealth Minister and the relevant state/NT Minister. The relevant state/NT Minister carries out most day to day administration in accordance with legislative provisions.

Australian Diver Accreditation Scheme (ADAS): administered by the Board of the Australian Diver Accreditation Scheme.

Guidance

- 2.1.5.5 The Australian Diver Accreditation Scheme (ADAS) is a not-for-profit diver training and accreditation scheme operated on a cost-recovery basis.
- 2.1.5.6 ADAS offers accreditation to diving personnel who can establish that they have been assessed by an ADAS accredited training establishment (ATE) as meeting the competency requirements of the relevant Parts of the AS 2815 series. This accreditation is only valid whilst diving operations are being undertaken in accordance with relevant legislation and operational standards and for a diver, whilst in possession of a current AS/NZS 2299.1:2015 medical certificate certifying him or her fit to dive.
- 2.1.5.7 In particular, ADAS accredits ATEs to conduct the training and competence assessments of divers to the levels of the various parts and to recommend their accreditation under the scheme. Accreditation as an ADAS ATE is conditional upon meeting demanding entry requirements and thereafter maintaining compliance with rigorous ongoing quality-assurance conditions.

AS/ANZ, followed by a number: the Australian and New Zealand Standard of that number, as existing from time to time.

Guidance

- 2.1.5.8 Standards are published documents which set out specifications and a procedure designed to ensure that a material, product, method or service is fit for its purpose and consistently performs the way it was intended to. They are intended to act as vehicles of communication for producers and users. They establish a common language, which defines quality and establishes safety criteria.
- 2.1.5.9 As part of the closer economic relations agreement, Standards Australia has a formal agreement for preparing and publishing joint standards where appropriate with Standards New Zealand. Such standards apply equally in both countries.

Standards are reviewed and updated periodically, and a reference in these regulations to a particular standard is to be taken as referring to the most recent version of that standard.

Diving: defined in regulation 4.1

Guidance

- 2.1.5.10 See chapter 4, part 1, regulation 4.1.

Diving contractor: a person who enters into a contract to conduct a diving project
Guidance

- 2.1.5.11 A diving contractor is a contractor within the ordinary meaning of the term who, by reason of having access to the appropriate equipment, procedures, personnel and specialist knowledge, undertakes to provide diving services on a contractual basis in support of activities for the offshore petroleum industry.

Diving operation: an offshore petroleum operation or greenhouse gas storage operation consisting of one or more dives.
Guidance

- 2.1.5.12 A diving operation is the portion of a diving project identified in the diving project plan which can be managed safely by one supervisor. Diving operations can be made up of either a single dive or a number of dives. It will normally be evident what this portion of work is, but factors such as the task, site conditions and the diving techniques to be used; all contribute to making the decision. For example, a 28-day diving project may be made up of 40 diving operations.

Diving project: means an activity consisting of one or more diving operations
Guidance

- 2.1.5.13 'A diving project' is the term used for the overall diving job - whether it lasts two hours or two months. It means any activity, made up of one or more diving operations, in which at least one person takes part or will take part as a diver. A diving project can apply to both a continuous period of elevated pressure, as in saturation diving, or to a number of diving operations, possibly taking place over several days, where the divers are not under continuous elevated pressure.

Diving safety management system (DSMS)
Guidance

- 2.1.5.14 A DSMS is a comprehensive integrated system for managing safety, prepared and documented by a diving contractor in consultation with the contractor's employees and/or their representatives. It must include detail of the contractor's policies and operational protocols and procedures, equipment certification, maintenance and operating procedures, risk assessment procedures, and management arrangements to ensure that risks to the safety of personnel involved in the diving operations are reduced to a level as low as reasonably practicable.
- 2.1.5.15 The DSMS must demonstrate to the satisfaction of the regulator, through its contents and supporting materials, that the diving contractor knows what technical and human activities occur, how they are to be managed, and how safety will be ensured in the event of an emergency.
- It must also identify methods to be used for monitoring and reviewing all activities in connection with the diving contractor's operations with a view to ensuring the continual improvement of those safety arrangements.
- 2.1.5.16 Once a DSMS has been accepted, the regulator conducts periodic reviews the safety performance of the diving contractor through on-site audits, inspections and the investigation and analysis of incidents, to determine whether the applicable standards and arrangements are being followed.
- 2.1.5.17 For detailed guidance on the preparation of a DSMS see chapter 4 part 2 of this guidance.

Facility: defined by clause 3 of Schedule 3 to the OPGGS Act.**Guidance**

- 2.1.5.18 Facility means any vessel or structure located in an adjacent area that is used or constructed for the recovery of petroleum or carries, contains or includes equipment for carrying out operations with a well from the vessel or structure. Facilities descriptions see schedule 3, part 1 clause 4 of the OPGGS Act.

Manned submersible craft: a submersible craft that is designed to maintain its occupant, or some or all of its occupants, at or near atmospheric pressure while submerged (whether or not it is self-propelled, and whether or not it is supplied with breathing mixture by umbilical), including a craft in the form of a suit.

Guidance

- 2.1.5.19 Alternatives to deep hyperbaric diving include one-atmosphere systems that provide the operator with an enclosed environment at surface pressure and which mimic the manual dexterity of the diver through the development of mechanical arms.
- 2.1.5.20 Manned submersibles can be self-propelled diving suits or submarine vehicles. They can operate untethered and self-contained or tethered by an umbilical link with the surface and could be free swimming or bottom crawling and self-propelled

Operator: defined in clause 3 of schedule 3 to the OPGGS Act.**Guidance**

- 2.1.5.21 The operator of a facility is the person/company who has been formally identified by the titleholder(s) of the field in writing to NOPSEMA as being responsible for the overall management and operation of the facility. The operator may be the titleholder, a member of a joint venture partnership or a company contracted by the titleholder(s) to undertake the operation of the facility.
- 2.1.5.22 The operator under Australian law has the responsibility for preparing and submitting to the regulator safety case for operating a facility. The operator has the fundamental responsibility to ensure that the facility is operated according to the policies, practices and procedures set out in the safety case.
- 2.1.5.23 The operator must undertake all reasonable actions to ensure the health and safety of those persons, including contractors, employed on the facility. These actions must include the implementation of a continuous improvement process through adequate arrangements for audits, the systematic evaluation and review of hazards to ensure that risks personnel are reduced to the lowest level that is reasonably practicable.

Offshore petroleum operations: defined in section 643 of the OPGGS Act**Guidance**

- 2.1.5.24 Refers to any regulated operations, including diving operations that take place in NOPSEMA waters involving any of the following; exploration, recovery, processing, storage, offloading or piped conveyance of petroleum.

‘Regulations’ means regulations made under the OPGGS Act, including these regulations

Guidance

- 2.1.5.25 The regulations legislate all aspects of offshore petroleum operations. The OPGS Act itself is supplemented and extended by subordinate legislation such as regulations, directions and guidance documents.
- 2.1.5.26 Regulations relate to specific issues identified in an act of Parliament and are made through the formal law making process. They are made by approval of the Governor-General without the need for the formal up-front approval of Parliament, although a process is in place to enable the Parliament to assess and then disallow subordinate legislation if it so desires.

2.2 DIVING

2.2.1 REGULATION 4.1: MEANING OF DIVING

- (1) For these regulations, a person is diving if he or she:**
- (a) is in a chamber inside which the ambient pressure is equal to or higher than the hydrostatic pressure at a depth of 1 metre in seawater (whether or not the chamber is submerged in water or another liquid)**
 - (b) is submerged in water or another liquid and his or her lungs are subjected to a pressure greater than atmospheric pressure (whether or not he or she is wearing a wetsuit or other protective clothing)**
 - (c) is in a manned submersible craft that is submerged in water or another liquid.**
- (2) For these regulations, diving also includes diving using a snorkel and diving without the use of any breathing apparatus.**
- (3) For these regulations, diving does not include:**
- a) diving using a snorkel for the purpose of conducting an environmental survey;**
 - or**
 - b) diving without the use of any breathing apparatus for that purpose.**

Guidance

- 2.2.1.1 It must be noted that these regulations are intended to apply to anyone who is undertaking diving in any normal sense of the word to undertake work of any kind subject to the provisions of the OPGGS Act.
- 2.2.1.2 A person therefore is diving if they are immersed in water or any other liquid to perform work of any kind and/or is in a chamber where the pressure is greater than normal atmospheric pressure. Diving includes immersion whilst in a manned submersible craft (see chapter 1).

2.2.2 REGULATION 4.2: WHEN A DIVING OPERATION BEGINS AND ENDS

- (1) For these regulations, a diving operation begins when the diver, or first diver, who takes part in the operation, starts to prepare to dive.**
- (2) A diving operation ends when the diver, or last diver, who takes part in the operation, leaves the water or the chamber or environment in which the dive took place and has completed any necessary decompression procedures.**
- (3) A diving operation includes the time taken for therapeutic recompression if that is necessary.**

Guidance

- 2.2.2.1 The diving operation does not necessarily finish once the last diver has returned to atmospheric pressure. Most decompression procedures require the diver to remain in the close vicinity of a recompression chamber for a specified time in case there is a need for treatment of symptoms of decompression illness. The diving project is only completed once that time period has finished.
- 2.2.2.2 Planning and procedures should also include reference to travel after diving particularly where there may be changes in ambient pressure (e.g. flying and road travel over mountain ranges). The diving operation is only completed once that time period has finished.

2.3 DIVING SAFETY MANAGEMENT SYSTEM

2.3.1 REGULATION 4.3: NO DIVING WITHOUT A DSMS

- (1) Before beginning diving work that forms part of a diving project, a diving contractor must:**
 - (a) have a DSMS that is:**
 - i. accepted**
 - ii. current**

Guidance

- 2.3.1.1 This regulation puts in place the requirement for all diving contractors who intend to undertake offshore diving work to have a DSMS that has been accepted by NOPSEMA. A DSMS is the fundamental prerequisite for a diving contractor to engage in diving activities subject to the OPGGS Act. The DSMS must have been assessed by the NOPSEMA and found to meet all the requirements of these regulations and conform to the minimum standards of these Guidelines, and formally accepted in writing.
- 2.3.1.2 The DSMS must also be current, that is:
- a) it must be an accurate representation of the policies, staffing, procedures and equipment that the diving contractor is currently using,
 - b) it must be an up-to-date revision as per the provisions of regulation 4.10 (see section 2.3.8 below for further guidance on revision of a DSMS).
- 2.3.1.3 In any event, a diving contractor must submit a five-yearly revision of their DSMS, before the fifth anniversary of acceptance, to avoid the DSMS losing its 'current' status. Diving contractors are reminded that it is a strict liability offence to allow diving or to continue a diving project without an accepted and current DSMS in place.

(b) give the DSMS to the operator of the diving project.

Penalty: 50 penalty units.

Guidance

- 2.3.1.4 The operator has overall responsibility for the safe execution of projects associated with a facility and its safety case. The operator and diving contractor together have responsibility, under the Act and Regulations, for ensuring that a safe diving project is carried out. The operator must ensure that the diving contractor conducts the project in accordance with the DSMS and must be in possession of a copy of the diving contractor's DSMS in order to enable this to happen.

(2) The operator of a diving project must not allow diving work, which forms part of the diving project, to begin if the diving contractor has not given to the operator a DSMS that is:
a) accepted
b) current.

Penalty: 100 penalty units.

Guidance

- 2.3.1.5 The operator has overall responsibility for the safe execution of projects associated with a facility and its safety case. The operator and diving contractor together have responsibility, under the Diving Regulations, for ensuring that a safe diving project is carried out. The operator must ensure that the diving contractor conducts the project in accordance with the DSMS and that arrangements are coordinated between the DSMS and the facility safety case. The operator must be in possession of a copy of the diving contractor's DSMS and ensure the diving contractor's DSMS is appropriate for the proposed activities of the diving project. The operator may check on the currency status of the diving contractor's DSMS through the Register of DSMS' as established under regulation 4.9.

(3) A diving contractor must not allow diving to continue on a diving project if the DSMS is no longer:
(a) accepted; and
(b) current

Penalty: 50 penalty units.

Guidance

- 2.3.1.6 A DSMS is the fundamental prerequisite that a diving contractor must have in order to engage in diving activities subject to the OPGGS Act. The DSMS must have been assessed by NOPSEMA and found to meet all the requirements of the regulations.
- 2.3.1.7 The DSMS must also be current – i.e. it must be an accurate representation of the policies, staffing, procedures and equipment that the diving contractor is currently using, and it must be an up-to-date revision as per the provisions of regulation 4.10. If the diving contractor does not possess a DSMS that is accepted and current, the diving work cannot be undertaken or, if diving is being undertaken, it must cease.

(4) For this regulation, an accepted DSMS is current if:

- (a) the DSMS has not been revised, or the acceptance of the DSMS has not been withdrawn, since its latest acceptance.**
- (b) it is not more than five years since its latest acceptance.**

Guidance

2.3.1.8 Regulation 4.10 mandates a range of circumstances where a diving contractor's DSMS must be formally revised and given to NOPSEMA for re-assessment and renewal of its acceptance. These circumstances include at the end of each period of five years.

2.3.1.9 If the DSMS has been:

- a) revised under any of the provisions of regulation 4.10 but not been accepted by NOPSEMA, or
- b) it is more than five years since the latest revision and acceptance by NOPSEMA, then the DSMS is not current and the diving contractor cannot undertake diving work that forms part of a diving project subject to these regulations.

(5) Strict liability applies to subparagraphs (1) (a) (i) and (ii), paragraphs (2) (a) and (b) and paragraphs (3) (a) and (b)

Note: A person may consult the register mentioned in regulation 4.9 to find out if a DSMS is accepted and current.

Guidance

2.3.1.10 If a prosecution is to be undertaken for an offence under these regulations, there are two ways of describing the offence – offences that have fault elements and offences of strict liability:

- a) When prosecuting offences with fault elements, the prosecutor has to prove not only that the offence was committed, but that there was an intention to commit an offence.
- b) In the case of strict liability offences, the prosecutor only has to prove that the offence was committed. For example, in regard to "No diving without a DSMS", the prosecutor only has to prove that diving was undertaken and the diving contractor did not have a current and accepted DSMS. There is no requirement to prove that the diving contractor intended to commit an offence.

2.3.2 REGULATION 4.4: CONTENTS OF DSMS

(1) A DSMS must meet the minimum standards set out in guidelines made by NOPSEMA for this sub regulation, as in force from time to time.

Guidance

2.3.2.1 These guidelines give comprehensive advice on formulating a DSMS. Detailed guidance can be found in section 3 of the guidelines.

(2) A DSMS must provide for:
(a) all activities connected with a diving project

Guidance

2.3.2.2 A DSMS is a comprehensive document prepared by a diving contractor in conjunction with his employees or employee representatives. It must demonstrate how the diving contractor is going to undertake the conduct of diving projects so as to provide and maintain a working

environment (including equipment and systems of work) that reduces risks to the safety and health of divers and other employees to a level as low as reasonably practicable (ALARP). Detailed guidance for the preparation a DSMS can be found in section 3.

- 2.3.2.3 In preparing the DSMS, the diving contractor must ensure that it covers all the activities that occur in undertaking a diving project.
- 2.3.2.4 It should detail, and ensure the continuous improvement of, operational protocols and procedures, equipment certification, maintenance and operating procedures, risk assessment procedures, and management arrangements to ensure the continued safety of the personnel involved in the diving operations.
- 2.3.2.5 As a minimum, the following information should be provided:
- a) effective health and safety policies that set a clear direction for the organisation to follow and set measurable and obtainable safety objectives
 - b) management system elements, including organisation and structure, methods of ensuring competence, communication, methods of management control and the linkages between systems by which safety objectives are to be achieved
 - c) performance standards that are to be met for each of the identified systems.

(b) the preparation of a DPP, in accordance with part 3, for a project (including consultation with employees in the preparation of the plan) and the revision of the plan as necessary; and

Guidance

- 2.3.2.6 The DPP is a detailed plan developed to manage a specific diving project. It must take into account the specific requirements of the particular diving job and dive site, and, where relevant, must form the bridging document between the operator's safety case all other relevant safety cases and the DSMS.
- 2.3.2.7 There may be a diving project that includes multiple facility safety cases. As such, its preparation requires consultation between the relevant operators, diving contractor and employees. It must ensure arrangements between the safety management systems are coordinated and clearly understood, and that there is common understanding and agreement on issues such as simultaneous operations and emergency response.

(c) the continual and systematic identification of hazards related to a diving project

Guidance

- 2.3.2.8 The DSMS should also include information giving details of the DSMS elements that ensure all hazards are identified, systematically assessed and either eliminated or controlled. The first stage in eliminating or controlling risk is identifying any hazards that could cause harm. The DSMS must require that a hazard identification process is an integral part of the diving project plan and give details as to how this is to be undertaken.

- (d) the continual and systematic assessment of:**
- i. the likelihood of the occurrence, during normal or emergency situations, of injury or damage associated with those hazards
 - ii. the likely nature of any injury or damage.

Guidance

- 2.3.2.9 The second stage in risk management is the assessment of risk in terms of the likelihood and consequence. These risks should be assessed for normal and emergency situations. The DSMS must require that a risk assessment process is an integral part of the DPP and give details as to how this is to be undertaken.

- (e) the elimination of risks to persons involved with the project and associated work including:**
- i. risks arising during evacuation, escape and rescue in case of emergency
 - ii. risks to persons involved with the operation arising from equipment and hardware
 - iii. or the reduction of those risks to ALARP.

Guidance

- 2.3.2.10 When risks have been analysed and assessed, decisions can be made about workplace precautions and risk controls. The DSMS must require that this process is an integral part of the diving project plan and give details as to how this is to be undertaken.
- 2.3.2.11 This regulation requires that risks be eliminated or reduced to ALARP. It particularly emphasises that this is to include risks to persons arising during escape, evacuation and rescue in case of emergency and from equipment and hardware.
- 2.3.2.12 It should be noted that this requires the diving contractor to eliminate risks. It recognises, however, that in some instances total elimination of risk is not possible because of technological limitations or prohibitive cost. It therefore provides the option of reducing the risks to ALARP, which involves an assessment of relative costs, effectiveness and reliability of different control measures.
- 2.3.2.13 In practice, ALARP means that the operator has to show through reasoned and supported arguments that there are no other practicable options that could reasonably be adopted to reduce risks further. Further guidance on the concept of ALARP is available in NOPSEMA's guidance note on ALARP (N-04300-GN0166), available at www.nopsema.gov.au.

- (f) the inspection and maintenance of, and testing programs for, equipment and hardware integral to the control of those risks**

Guidance

- 2.3.2.14 The diving contractor must have an effective system of maintenance to ensure operational safety. The diving contractor must demonstrate that standards are in place for maintaining plant equipment and hardware. The applicable inspection, maintenance and testing standards and procedures identified must be implemented effectively.

- (g) communications between persons involved in a diving project**

Guidance

- 2.3.2.15 The diving contractor must develop and maintain effective participation and consultative

mechanisms that promote active communication and involvement of all personnel in the management of safety and the control of workplace hazards and risk. This means communication in a holistic sense - more than just ensuring the availability of mobile phones and/or two-way radios - it includes effective communication coming into, flowing within and going out from the organisation.

2.3.2.16 The diving contractor should demonstrate that formal and informal methods are used to inform employees of health and safety issues, and that formal methods of communication are used to advise personnel of their health and safety related roles, responsibilities, accountabilities and authorities. Key information includes:

- a) the organisation's vision, values and beliefs which underlie the formal health and safety policy
- b) the commitment of senior management to its implementation
- c) plans, standards, procedures and systems relating to implementation and measurement of performance
- d) factual information to help secure the involvement and commitment of employees;
- e) performance reports
- f) lessons learned from accidents and other incidents.

(h) the performance standards that apply to the DSMS

Guidance

2.3.2.17 The diving contractor should establish, maintain and monitor measurable and achievable health and safety objectives, plans and performance standards consistent with the company's health and safety policy.

2.3.2.18 Monitoring health and safety performance should be a line management responsibility and requires both active systems (which monitor the design, development, installation of management arrangements and risk control strategies) and reactive systems which monitor accidents, ill health, incidents and other evidence of deficient health and safety performance.

2.3.2.19 Performance standards are the basis of planning and measuring health and safety achievements – 'what gets measured gets done' applies. If organisations are to be efficient and effective in controlling risks, they need to coordinate their activities to ensure everyone is clear about what they are expected to achieve. They need to understand and specify what has to be done, both to control the direction of the organisation as a whole and to deal with specific risks.

2.3.2.20 Setting performance standards is essential if policies are to be translated from good intentions into a series of coordinated activities and tasks. Standards should:

- a) set out clearly what people need to do to contribute to an environment which is free of injuries, ill health and loss;
- b) help identify the competencies which individuals need to fulfil their responsibilities;
- c) form the basis for measuring individual, group and organisational performance.

2.3.2.21 They should link responsibilities to specific outputs and specify:

- a) Who is responsible (a name or position of a person who has the competence to undertake

the responsibility)

- b) What they are responsible for (what is to be done and how. It may involve applying specific procedures or systems of work and the use of specific documents or equipment because of legal duties – e.g.
 - (i) preparing plans to implement the health and safety policy
 - (ii) carrying out risk assessments
 - (iii) periodic monitoring of health and safety performance
 - (iv) checking contractors' health and safety performance before awarding contracts
 - (v) conducting tool box meetings which many include , for example, a reminder of important health and safety procedure or lessons form a recent incident or accident
 - (vi) providing training
- c) When the work should be done (some work may occur regularly - e.g. monthly inspections - or only when particular tasks or jobs are being done (for example when using a particular substance or piece of equipment). A time frame should be set for these tasks or inspections.
- d) What the expected result should be. Some outputs may relate to legal requirements (e.g., the achievement of a certain air quality standard). Alternatively, the output may be satisfactory accomplishment of a specified procedure (e.g. training). Output standards can be used to specify how individuals will be held accountable for their health and safety responsibilities.

2.3.2.22 People with specific responsibilities for health and safety should be held accountable. This may involve the use of existing personnel systems such as:

- a) individual job description containing references to health and safety responsibilities
- b) performance review and appraisal systems measuring and rewarding individual performance in health and safety activities
- c) procedures identifying and acting upon failures by any employee (including managers) to achieve adequate health and safety performance. These can be integrated with normal disciplinary arrangements and be invoked when justified by the seriousness of the failure to comply.

(i) continuous improvement program

Guidance

2.3.2.23 The DSMS is accepted by NOPSEMA on the basis that it is an accurate representation of the diving contractor's entire business management arrangements applying to offshore diving contracts. It must include detail of the organisation's policies, practices and procedures. These should be at the level of good industry practice. The DSMS is a key aspect of the diving contractor's business management arrangements - managing for safety must be a fundamental and integral part of the business strategy.

2.3.2.24 The DSMS must provide for continuous improvement so that risks to persons involved with a diving project are eliminated or reduced to ALARP. However, ALARP is not an absolute term - it

is relative to the state of knowledge and technical development at any one time. It is inevitable that, over time, standards and procedures will change. The DSMS will also change from the one originally accepted by NOPSEMA. Achievement of ALARP therefore requires the constant monitoring and development of the diving contractor's policies, systems, plant and equipment and techniques incorporating an integrated continuous performance review and corrective action implementation process. Performance must be assessed by internal reference to key performance indicators and external comparison with local, national and international best practice.

2.3.2.25 The diving contractor must detail in the DSMS how the continuous improvement process will be managed throughout diving projects. This could be as simple as a formal policy statement committing the organisation to:

- a) establishing appropriate standards and procedures for the management of projects based on risk assessment and best practice standards for high risk training and assessment
- b) implementing plans to achieve objectives and standards
- c) measuring progress with achieving plans and compliance with standards
- d) reviewing against objectives and standards, identifying opportunities for improvement and taking appropriate improvement actions to feed back into the process.

2.3.2.26 It should be noted that NOPSEMA will be interested during audits or investigation in reviewing the organisation's process for this aspect of the DSMS and examining outcomes from it.

(3) A DSMS must:

(a) specify any standard or code of practice that is to be used in a diving project

Guidance

2.3.2.27 The DSMS must adequately specify what standards, guidelines or codes of practice - Australian and international - that the diving contractor intends are applied in the design, construction or operation of any relevant plant and equipment and in undertaking any diving operations.

2.3.2.28 Standards are published documents which set out specifications and procedures designed to ensure that a material, product, method or service is fit for its purpose and consistently performs the way it was intended to. They are intended to act as vehicles of communication for producers and users. They establish a common language, which defines quality and establishes safety criteria.

2.3.2.29 Whilst they generally do not have legal status (unless specifically referenced in the legislation) standards have strong evidentiary status and conformance with an acknowledged standard is a valuable defense against prosecution. Codes of practice have similar, though less formal, status. The diving contractor has the flexibility to identify, assess and select what standards best suit particular operational aspects. Once having selected relevant standards. This regulation requires that they be identified in the DSMS.

(b) require the diving to be carried out in accordance with those standards or guidelines

Guidance

2.3.2.30 Once having identified the standard (s) to be used in a particular application, the DSMS must specify in its policies and/or procedures that such standards, guidelines or codes of practice

must be used in undertaking the relevant activity.

(4) A DSMS must contain:

- (a) any information that is reasonably necessary to demonstrate that the DSMS complies with these regulations**

Guidance

- 2.3.2.31 The DSMS must specify in adequate detail how it provides for all the matters specified in these regulations and particularly in regulations 4.4 (1), (2) and (3) as above.

(b) a management of change system

Guidance

- 2.3.2.32 The diving contractor should ensure that a management of change process is in place. The changes and modifications are reviewed for hazards and risk prior to implementation. The information of change should be communicated to all relevant employees and stakeholders. The DSMS must demonstrate that:

- a) arrangements are in place for controlling modifications to plant, equipment, materials, practices and procedures used in the diving contractors operations
- b) arrangements are in place for controlling permanent and temporary organisational and work activity modifications and changes, and how this is communicated to relevant employees
- c) procedures are established, implemented and maintained for the control of all relevant safety and risk management documents, plans, drawings and data
- d) arrangements are in place for assessing health and safety implications when there is organisational or work activity changes.

- 2.3.2.33 For detailed guidance in regard to complying with This Regulation, see Section 3 of this guidance

2.3.3 REGULATION 4.5: ACCEPTANCE OF NEW DSMS

- (1) If a diving contractor does not already have an accepted DSMS, the contractor must give a DSMS to NOPSEMA at least 60 days before a proposed diving project is expected to begin**

Guidance

- 2.3.3.1 This regulation applies:
- a) All diving contractors must have a NOPSEMA accepted DSMS prior to conducting diving activities. In the event the diving contractor does not have a DSMS the contractors must submit a DSMS in compliance with the provisions of regulation 4.3 and have it accepted by NOPSEMA prior to conducting any diving activities.
- 2.3.3.2 The minimum of 60 days' notice to NOPSEMA is to allow the regulator sufficient time to undertake a thorough assessment of the proposed DSMS as well as cope with the requirements of a normal work load.

- (2) Within 60 days after receiving the DSMS, NOPSEMA must accept or reject the DSMS.**
- (3) As soon as practical after making a decision under sub regulation NOPSEMA must notify the diving contractor of its decision.**

Guidance

- 2.3.3.3 Within 60 days of receiving a new DSMS, NOPSEMA must either:
- a) accept the DSMS
 - b) reject the DSMS as being unsatisfactory in regard to failing to comply with a particular aspect of regulation 4.4, including not meeting the minimum standards set out in part B of these guidelines as required by regulation 4.4 (1).
- 2.3.3.4 New diving contractors who are planning to prepare an initial DSMS are encouraged to contact NOPSEMA at the earliest opportunity to seek any clarifications and additional advice regarding regulatory requirements.
- 2.3.3.5 Based on the DSMS submission NOPSEMA may request further information or clarification. NOPSEMA will write to the diving contractor and set out the elements for which further written information is requested.

Note: These regulations do not provide an explicit obligation on the diving contractor to respond to requests for further written information and therefore responding to such a request is voluntary on the part of the diving contractor.

2.3.4 REGULATION 4.6: ACCEPTANCE OF REVISED DSMS

- (1) If a diving contractor has revised a DSMS, the contractor must give the revised DSMS to NOPSEMA.**

Guidance

- 2.3.4.1 The Regulations place an obligation on the diving contractor - consistent with the requirement that the DSMS must be managed for continuous improvement - to maintain the currency of the DSMS. The DSMS must be an accurate representation of the policies, standards, staffing, procedures and equipment that the diving contractor is currently using, and must be up-to-date in regard to the specific requirements of regulation 4.10.
- 2.3.4.2 If the DSMS becomes significantly different from that accepted by NOPSEMA, and is revised by the diving contractor, it must be submitted to NOPSEMA for re-assessment.

- (2) NOPSEMA must accept or reject the DSMS within:**
 - (a) 28 days after receiving the revised DSMS; or**
 - (b) another period agreed between NOPSEMA and the diving contractor**
- (3) As soon as practical after making a decision under sub regulation (2), NOPSEMA must notify the diving contractor of its decision.**

Guidance

- 2.3.4.3 Within 28 days after receiving a revised DSMS, NOPSEMA must either:
- a) Accept the revised DSMS; or
 - b) Reject the revised DSMS as being unsatisfactory in regard to failing to comply with a particular aspect of the regulations or not meeting the minimum standards set out in these guidelines as

required by regulation 4.4 (1), (see regulation 4.7).

- 2.3.4.4 The diving contractor and NOPSEMA may agree a period other than 28 days, for example, if the revision is complex and extensive in nature and cannot be adequately assessed within 28 days.
- 2.3.4.5 If NOPSEMA is of the view that further information or clarification is necessary in order that an assessment decision can be made, NOPSEMA will write to the diving contractor and set out the elements for which further written information is requested.
- 2.3.4.6 NOPSEMA will write to the diving contractor formally advising of the assessment decision as soon as practical after arriving at a decision.

2.3.5 REGULATION 4.7: GROUNDS FOR REJECTING DSMS

NOPSEMA must reject a DSMS if:
(a) the DSMS does not adequately comply with regulation 4.4

Guidance

- 2.3.5.1 Regulation 4.4 sets out a number of aspects of the diving contractor's activities that the DSMS must make provision for. Section 3 of these guidelines provides further detail on complying with regulation 4.4. If the proposed DSMS does not adequately comply with any of these aspects, regulation 4.7(a) requires NOPSEMA to reject it.

(b) NOPSEMA is not satisfied that there was consultation with divers and other members of the workforce in the preparation of the DSMS, as required by regulation 4.18.

Guidance

- 2.3.5.2 Regulation 4.18 requires that the diving contractor ensure that there is effective consultation with relevant divers and other employees. In submitting the DSMS for assessment, the diving contractor must set out in writing details of the consultation that has taken place. If the diving contractor does not demonstrate to satisfaction of NOPSEMA that such consultation has taken place, or that it was effective consultation within the normal meaning of the word, the regulation 4.7 (b) requires that NOPSEMA must reject the DSMS.

2.3.6 REGULATION 4.8: NOTICE OF REASONS

- (1) If NOPSEMA decides to reject a DSMS NOPSEMA must set out, in writing, with the notice mentioned in sub regulation 4.5(2) or 4.6(2), the reasons for rejecting the DSMS.**
- (2) If NOPSEMA decides to impose conditions on a DSMS, NOPSEMA must set out, in writing, with the notice mentioned in sub regulation 4.5(2) or 4.6(2), the reasons for imposing conditions on the DSMS.**

Guidance

- 2.3.6.1 This regulation places an obligation on NOPSEMA to provide the diving contractor with reasons why the DSMS has been rejected or had conditions put on it.
- 2.3.6.2 Alternatively NOPSEMA may accept the DSMS subject to certain conditions. In this case NOPSEMA must state in the acceptance letter what the conditions are and the reasons for imposing them.

2.3.7 REGULATION 4.9: REGISTER OF DSMS

(1) NOPSEMA must keep a register of each DSMS and revised DSMS it receives, in a form that allows public access.

Guidance

2.3.7.1 This regulation requires that NOPSEMA keep a register of the details of all DSMSs that have been received. The primary purpose of the regulation is to ensure that operators can readily satisfy the obligation on them under regulation 4.3 that a diving contractor has an accepted and current DSMS before allowing diving work to begin.

(2) The register must record as many of the following details as apply to the DSMS:

- (a) the name of the diving contractor**
- (b) the date of acceptance**
- (c) any conditions on acceptance**
- (d) the date of rejection**
- (e) the date that acceptance was withdrawn**
- (f) the date of any revision notice under regulation 4.11**

Guidance

2.3.7.2 This provides that the register must detail the information necessary for the operator to determine whether or not a diving contractor has an accepted and current DSMS.

2.3.7.3 The register is located on the NOPSEMA website and is updated shortly after the completion of each assessment, this provides details of DSMSs that have been rejected and accepted including particulars of any conditions imposed on acceptance.

(3) NOPSEMA must also record on the register, the following details for each diving project plan it receives under regulation 4.13:

- (a) the name of the diving contractor**
- (b) the diving project to which the diving project plan applies**
- (c) the proposed commencement date of the project**
- (d) the date of receipt of the plan.**

Guidance

2.3.7.4 There may be a small number of instances where a diving contractor is undertaking an offshore diving project, subject to the regulations, that does not involve a facility, and therefore does not involve an operator as defined by clause 5 of schedule 3 to the OPGGS Act. An example of these circumstances may include undertaking a diving operation on an unlicensed pipeline or a well that is in a non-producing state to retrieve debris.

In these instances, the diving operation is subject to the provisions of regulation 4.13, which requires that the diving project plan be forwarded by the diving contractor to NOPSEMA for assessment and acceptance. NOPSEMA is then required to enter the relevant details onto the DSMS and DPP register.

2.3.8 REGULATION 4.10: REVISION OF DSMS

A diving contractor must revise a DSMS:

(a) if developments in scientific or technical knowledge, or in the assessment of hazards, relevant to diving projects make it appropriate to do so

Guidance

- 2.3.8.1 The DSMS is required by these regulations to be an accurate record of the diving contractor's policies, practices and procedures, complying with the provisions of these regulations as per the state of knowledge and operational procedures as they were at the time the time of acceptance.
- 2.3.8.2 As such, the DSMS is a key aspect of the diving contractor's business management arrangements - managing for safety must be a fundamental and integral part of the business strategy, not an afterthought tacked on at the end. As required by regulation 8, the DSMS must be managed for continuous improvement so that risks to persons involved with a diving project will be continuously reviewed to ensure that they are eliminated or reduced to ALARP.
- 2.3.8.3 This requires the constant monitoring and development of the diving contractor's policies, systems, plant and equipment and techniques. If as a result of developments in scientific or technical knowledge such aspects of the DSMS can reasonably be improved and the level of risk thus reduced, the DSMS must be revised incorporating such developments and maintaining ALARP.
- 2.3.8.4 Following such a revision, the diving contractor must submit the revised DSMS to NOPSEMA for assessment as required by regulation 4.6 (1).

(b) if the diving contractor proposes to make a significant change to the method of operation or to procedures or equipment

Guidance

- 2.3.8.5 As noted above, the DSMS is required by these regulations to be an accurate record of the diving contractor's policies, practices and procedures, relating to the state of knowledge and operational procedures as they were at the time the time of acceptance. If the diving contractor proposes to make significant change to any of these aspects, the DSMS must be revised to remain in conformance with this requirement.

(c) if NOPSEMA gives notice in accordance with regulation 4.11

Guidance

- 2.3.8.6 Regulation 4.11 provides that NOPSEMA may require the revision of a diving contractor's DSMS by the issuing of a notice in writing upon the diving contractor. If such a notice is received, the diving contractor must undertake the revision of the DSMS as required, except if the revision is later considered unnecessary, or should be in different terms from those proposed, under provisions of regulation 4.11(3).

(d) if a number of minor changes result in the DSMS being significantly different from the latest version of the DSMS accepted by NOPSEMA

Guidance

- 2.3.8.7 As noted above, the DSMS is required by these regulations to be an accurate record of the diving

contractor's policies, practices and procedures, relating to the state of knowledge and operational procedures as they were at the time the time of acceptance.

- 2.3.8.8 It is likely that the diving contractor will over time make small changes to policies, items of equipment, procedures and practices that in themselves do not warrant a revision of the DSMS. If the cumulative effect of these small individual means that the DSMS ceases to be such an accurate representation of the DSMS as accepted by NOPSEMA, it must be revised and submitted to NOPSEMA.

(e) at the end of each period of five years commencing on the later of:

(i) the date when the DSMS is first accepted by NOPSEMA

(ii) the date of the most recent acceptance by NOPSEMA of a revised version of the DSMS.

Guidance

- 2.3.8.9 As noted above, the DSMS is required by these regulations to be an accurate record of the diving contractor's policies, practices and procedures, relating to the state of knowledge and operational procedures as they were at the time the time of acceptance. If the DSMS ceases to be such an accurate representation, it must be revised to remain in conformance with this requirement.
- 2.3.8.10 This regulation is a reflection of the reality that over a five year period, sufficient changes are likely to have occurred in the organisation's policy, operational, technical and legal environment that a revision of the DSMS is required to make it conform to the requirements of these Regulations.
- 2.3.8.11 The five year period is to be calculated from the most recent date that it has been accepted by NOPSEMA – i.e. taking into account two possible circumstances:
- a) if the DSMS has not, since the date when it was first accepted by NOPSEMA, subsequently been revised, re-submitted and accepted by NOPSEMA, from the date of its first acceptance
 - b) if it has since its date of first acceptance, subsequently on one or more occasion, been revised and re-accepted - from the date that it was most recently accepted.
- 2.3.8.12 It should be understood, however, that this is not a mandatory requirement to change any or all of the provisions of the DSMS. On top of and complementing the diving contractor's continuous improvement process, this mandatory revision of the DSMS should be regarded an opportunity to consider in detail the organisation's policies, standards, equipment, practices and procedures as compared with those detailed in the accepted DSMS.

2.3.9 REGULATION 4.11: NOTICE TO REVISE DSMS

(1) NOPSEMA may give a revision notice to a diving contractor to revise a DSMS

Guidance

- 2.3.9.1 This regulation gives NOPSEMA authority to require the revision of a diving contractor's DSMS by the issuing of a notice in writing upon the diving contractor.
- 2.3.9.2 Such a mandatory revision may be required by NOPSEMA for a number of reasons.
- a) The notice may reflect NOPSEMA's concerns in regard to some aspect of the general

diving operational environment, such as deficiencies being identified in relation to particular diving procedures or standards resulting from a major accident or incident, or equipment malfunctions as advised by manufacturers.

- b) It could be that the community's expectations in regard to acceptable risk acceptance criteria have become less tolerant over time and NOPSEMA requires that the DSMS be revised in keeping with these expectations.
- c) If NOPSEMA has identified that a diving contractor has deviated from the accepted DSMS but not revised it, NOPSEMA may use this provision to ensure the DSMS is brought up to date with current working practices and/or procedures.

- (2) A revision notice must be in writing and must set out:**
- (a) the matters to be revised**
 - (b) the time within which the revision must be completed**
 - (c) the reasons why the revision is necessary.**

Guidance

- 2.3.9.3 This regulation requires NOPSEMA when requiring a mandatory revision of the DSMS, to issue a notice in writing to the diving contractor. The notice must set out the details regarding the required revision, including what has to be revised and why, and including the date by which it must be submitted to NOPSEMA.

- (3) The diving contractor may make a submission in writing to NOPSEMA within 21 days after receiving the notice or any longer period that NOPSEMA allows in writing, setting out the contractor's reasons for any of the following:**
- (a) why the revision is not necessary**
 - (b) why the revision should be in different terms from those proposed**
 - (c) whether or not the contractor gives other reasons — why the notice should take effect on a later date than NOPSEMA set out in the notice.**

Guidance

- 2.3.9.4 Once having received the notice from NOPSEMA requiring that the diving contractor's DSMS be revised, the diving contractor may write to NOPSEMA requesting a variation of the notice to revise. The variation applied for may be that the revision:

- a) should not take place at all
- b) should take place in a different form to that required by NOPSEMA in the notice
- c) should take place at a date later than that required by NOPSEMA in the notice.

- 2.3.9.5 The submission to NOPSEMA must be made:

- a) within 21 days of having received the original notice
- b) if NOPSEMA agrees in writing to the diving contractor, such other time as may be arranged.

- (4) If a contractor makes a submission under subsection (3), NOPSEMA must, within 28 days after receiving the submission:**
- (a) decide whether the Designated Authority accepts the reasons in the submission**
 - (b) give the contractor notice in writing affirming, varying or withdrawing the revision notice**
 - (c) if NOPSEMA decides not to accept the reasons or any part of them — set out in this notice the grounds for not accepting them.**

Guidance

- 2.3.9.6 This regulation places a responsibility on NOPSEMA to make a decision regarding any submission made under sub regulation (3) above by the contractor. The decision whether to reject or accept the application must be conveyed to the diving contractor in writing within 30 days of NOPSEMA receiving the submission.
- 2.3.9.7 If NOPSEMA decides not to accept the variation requested by the diving contractor, NOPSEMA must set out in the notice the reason for such decision in the notice in writing.

- (5) The contractor must revise the DSMS, in accordance with the notice as originally given or as varied under sub regulation (4), and submit it to NOPSEMA**

Guidance

- 2.3.9.8 This regulation requires the diving contractor to comply with NOPSEMA's direction in regard to revising the DSMS under regulation 4.11 [whether as per the original notice from NOPSEMA {sub regulation (1)} or as varied under sub regulation (4)].

- (6) If the contractor does not revise a DSMS when required by this regulation to do so, NOPSEMA may withdraw its acceptance of the DSMS or its agreement to the use of the DSMS for the project**

Guidance

- 2.3.9.9 If, after having received a notice in writing from NOPSEMA in accordance with the original notice from NOPSEMA (under sub-regulation (1) or as varied under sub-regulation (4) above) the diving contractor does not undertake the revision in the manner requested, NOPSEMA may withdraw its acceptance of the DSMS.
- 2.3.9.10 As per the requirements of regulation 4.3 (2) and (3) above, if NOPSEMA withdraws acceptance of the DSMS under this provision, the diving contractor (and operator if one is involved) is required to ensure that no diving operation takes place or continues.

2.4 DIVING PROJECT PLANS

2.4.1 REGULATION 4.12: DPP TO BE APPROVED

- (1) This regulation applies if there is an operator for a diving project**

Guidance

- 2.4.1.1 This regulation applies where the diving contractor is undertaking work, either directly for an operator or as a subcontractor through a principal contractor to the operator.

(2) The diving contractor must prepare a diving project plan for each diving project in consultation with the operator for the project

Guidance

2.4.1.2 The diving project plan is the detailed plan developed to undertake a specific diving project. It must take into account the specific requirements of the particular diving job and dive site, and must form the bridging document between the operators safety case and the DSMS. As such, its preparation requires consultation between the operator, diving contractor and employees and any other relevant parties to the diving project.

2.4.1.3 The DPP must cover the general principles of the diving techniques to be used as well as the needs of the particular operation. It must also provide contingency procedures for any foreseeable emergency, including retrieving injured and unconscious divers from the water.

(3) The diving project plan must be approved by the operator for the project before diving can commence on the project.

(4) The operator must not approve the diving project plan unless the operator is satisfied that:

(a) the plan complies with regulation 4.16

Guidance

2.4.1.4 The operator for the project must approve the diving project plan before diving operations can commence. The operator must ensure that the contents of the plan meet the requirements of regulation 4.16 before approving the plan.

2.4.1.5 Operators are encouraged to utilise the DPP concordance table (available on NOPSEMA's website). This table has been designed to assist the diving contractor develop the DPP. The DPP address the regulatory content requirements of regulation 4.16.

(b) there was effective consultation in the preparation of the plan, as required by regulation 4.18.

Guidance

2.4.1.6 The operator must ensure that there was in fact effective consultation with the divers and members of the work force in development of the diving project plan. In accordance with regulation 4.18

2.4.2 REGULATION 4.13: Diving project plan to NOPSEMA if there is no operator

(1) This regulation applies if there is no operator for a diving project.

Guidance

2.4.2.1 This applies when the work is undertaken in relation to a Special Prospecting Authority, or where there is no direct or indirect involvement of an operator.

2.4.2.2 There may be a small number of instances where a diving contractor undertakes an offshore diving contract subject to the regulations that does not involve an operator or a facility as defined by clause 3 of schedule 3 to the OPGGS Act. Examples may include:

a) a diving operation on a well that is in a non-producing state to retrieve debris, or

- b) diving support provided for seismic survey operations conducted on an exploration licence.

(2) The diving contractor must prepare a diving project plan for the diving project and give a copy of the plan to NOPSEMA.

Guidance

- 2.4.2.3 The diving contractor prepares the project plan in conjunction with the any other relevant parties to the diving project. The completed plan is submitted to NOPSEMA for review.

**(3) NOPSEMA must not accept the diving project plan unless it is satisfied that:
(a) the plan complies with regulation 4.16**

Guidance

- 2.4.2.4 NOPSEMA will review the plan and not accept it if the contents do not meet the requirements of regulation 4.16.

(b) there was effective consultation in the preparation of the plan, as required by regulation 4.18

Guidance

- 2.4.2.5 The diving contractor must be able to demonstrate to NOPSEMA that there was effective consultation with divers and members of the workforce in development of the diving project plan in accordance with regulation 4.18.

(c) the diving operations to which the plan relates are appropriate to be covered by a single plan.

Guidance

- 2.4.2.6 The word ‘appropriate’ in this sub-regulation relates to the scope of the diving project in terms of location and duration; and the extent to which site and project specific hazards and associated risks can be effectively managed by a single DPP.
- 2.4.2.7 For example, a DPP that aims to provide for diving operations that are at a number of different facilities or locations that are geographically displaced, especially where there are hazards that are unique to the location or specific facility would be to effectively manage risk in the way that the DPP is designed to operate and would therefore not be considered appropriate. Where the above factors apply the proposed work should be broken down into a number of appropriately located projects, each requiring a separate DPP.

2.4.3 REGULATION 4.14: DPP TO NOPSEMA IF REQUESTED

If NOPSEMA asks the operator for a diving project for a copy of the diving project plan, the operator must give a copy of the plan to NOPSEMA

Guidance

- 2.4.3.1 The operator must submit the latest revision of the plan to NOPSEMA on request.
- 2.4.3.2 If requested to do so the operator must submit the latest revision of the operator approved DPP to NOPSEMA. In this instance NOPSEMA will make the request in writing to the operator. The

DPP can be requested for a number of reasons, but typically this provision is used when NOPSEMA is considering undertaking an inspection of the diving project. Having received the DPP, NOPSEMA will use the document to assist in the planning of the inspection.

- 2.4.3.3 Note: NOPSEMA does not assess, accept, or in any way approve the DPP, as this remains the responsibility of the operator for the project as required by regulation 4.12, except in circumstances where there is no operator, as detailed above under regulation 4.13.

NOPSEMA may monitor the diving contractor's and operator's compliance to the DSMS, safety case and diving project plan. This may occur during a planned inspection of a diving project. For further information refer to NOPSEMA's inspection policy (N-02000-PL1523) at www.nopsema.gov.au.

2.4.4 REGULATION 4.15: UPDATING DIVING PROJECT PLAN

(1) A diving contractor for a diving project must keep the diving project plan for the project up to date during the project

Guidance

- 2.4.4.1 Changes to the diving project plan must be incorporated into the latest revision of the plan under management of change procedures. Any revision must be done in conjunction with and be approved by the operator.
- 2.4.4.2 Additionally, in accordance with regulation 4.18, any revision must involve consultation with divers and other members of the workforce, as appropriate.

(2) The diving contractor must update the diving project plan if:
(a) because of modification of the project, there is a significant increase in the overall level of risk to a diving operation
(b) the operator for the project proposes to undertake or permit a modification of the project that might influence significantly the level of specific risks to a diving operation or the ranking of risk contributors.

Guidance

- 2.4.4.3 If there is a significant change in the risk levels then those contributing factors, and any additional controls to mitigate the risk, must be identified and included into the diving project plan.
- 2.4.4.4 As a matter of safe working practice, the project risk assessment should be reviewed at regular intervals, even if the risk is minimal; to ensure that the risk assessment is still adequate and does not need to be revised. If the diving contractor changes the diving project plan it must be revised with the knowledge and approval of the operator.

(3) If there is no operator for a diving project and the diving project plan has been updated, the diving contractor must resubmit the updated plan to NOPSEMA for consideration.

Guidance

- 2.4.4.5 Where there is no operator for the project the diving project plan must be submitted to NOPSEMA. See regulation 4.13.

2.4.5 REGULATION 4.16: CONTENTS OF DIVING PROJECT PLAN

- (1) A diving project plan must set out the following matters:**
(a) a description of the work to be done

Guidance

- 2.4.5.1 The diving project plan must cover the entire scope of work of the project and general principles of the diving techniques to be used as well as the needs of the particular operation.
- 2.4.5.2 The scope of diving operations is massive. Projects can vary from relatively simple operations, such as removing a rope from a vessel propeller, to subsea field installations. The scale and complexity of the plan will vary accordingly.

- (b) a list of the Commonwealth, and State or Territory, legislation (including these regulations) that the diving contractor considers applies to the project**

Guidance

- 2.4.5.3 This regulation requires that the acts and regulations applicable to the area of operation are detailed in the DPP. Further information can be found on under, 'Legislation and Regulations' at nopsema.gov.au.

- (c) a list of standards and codes of practice that will be applied in carrying out the project.**

Guidance

- 2.4.5.4 Typically this would include standards and guidelines identified in the contractor's DSMS and specific guidelines or standards used in the project, such as:
- a) AS/NZS 2299.1 2015
 - b) IMCA guidance notes
 - c) class society certifications and IMO codes for vessels and diving systems, where appropriate
 - d) codes and standards applicable to safety-critical equipment and project personnel training.

- (d) hazard identification**

Guidance

- 2.4.5.5 The DPP must detail the hazards that have been identified in relation to the diving project. For example:
- a) diving generic and site-specific hazards
 - b) diving hazards identified in the DSMS
 - c) diving related major accident events (MAEs) identified in the host facility safety case
 - d) diving related MAEs identified in the DSV safety case (if applicable)
 - e) diving related MAEs identified in any other safety case related to the project
 - f) project-specific hazards.

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- 2.4.5.6 Some examples of hazards are given below. This is not a complete list of all hazards or all measures needed to control risk. In special circumstances, or if certain contingencies arise, more stringent safeguards may be needed. Consideration should be given to:
- 2.4.5.7 Physiological effects:
- a) Toxic effects of air or gas mixtures from nitrogen narcosis or oxygen toxicity
 - b) Decompression illness (DCI) from failure to control exposure limits for surface-orientated diving. In other areas there are limits applied to maximum bottom times for air or nitrox diving using surface supplied techniques.
 - c) Details of any possible substance likely to be encountered by the dive team that would be a hazard to their health; this could include for example:
 - (i) drill cuttings on the seabed
 - (ii) effluent contamination of the area
 - (iii) potential contamination with naturally occurring radioactive material etc.
- 2.4.5.8 Physical Environment:
- a) diving in the vicinity of water-flow, intakes and discharges
 - b) restricted surface visibility
 - c) underwater currents
 - d) diving near remotely operated vehicle operations
 - e) diving from dynamically positioned vessels.
- 2.4.5.9 Procedural:
- a) language barriers
 - b) Familiarization with procedures, equipment and project.
- 2.4.5.10 Power tools:
- a) electricity
 - b) high-pressure water jetting
 - c) lift bags
 - d) abrasive cutting discs
 - e) oxy-arc cutting and burning operations.
- 2.4.5.11 Breathing gases:
- a) quantity of gases
 - b) quality of gases
 - c) levels of oxygen in helium and nitrogen
 - d) contents of gas mixes.
- 2.4.5.12 Saturation diving:
- a) lost closed bell contingency plan
 - b) hyperbaric evacuation
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- c) length of diver's umbilical
- d) transfer under pressure
- e) duration of saturation exposure.

2.4.5.13 Medical and physiological considerations:

- a) liaison with a doctor
- b) treatment of patients in a hyperbaric chamber
- c) diver monitoring
- d) adjacent noisy operations
- e) seismic operations and sonar transmissions
- f) decompression illness
- g) altitude changes
- h) thermal stress.

(e) a risk assessment

Guidance

- 2.4.5.14 Based on this information, the DPP must describe how the associated risks will be controlled. The diving project plan may include a diving contractor's standard operating rules, including generic risk assessments, but must ensure that the actual risks arising from the particular project are assessed and controlled. All documents should show the date of preparation.
- 2.4.5.15 The DPP should record the outcome of the planning carried out in preparing the risk assessment, including all information and instructions which, so far as is reasonably practicable, are necessary to protect the health and safety of all those taking part in the diving project.
- 2.4.5.16 As a matter of safe working practice, the project risk assessment should be reviewed at regular intervals, even if the risk is minimal, to ensure that the risk assessment is still adequate and does not need to be revised. The DPP should therefore include a reference to procedures for conducting reviews of the site and updating the specific risk assessments as necessary.
- 2.4.5.17 For example:
- a) a documented assessment of the project-specific hazards and implemented control measures
 - b) includes risks associated with emergency response and hyperbaric evacuation systems
 - c) includes procedures for conducting onsite reviews and updating the risk assessments.

(f) a safety management plan

Guidance

- 2.4.5.18 The DPP must set out the safety management plan, which makes clear how project specific PTW and SIMOP's systems are to be managed and the procedures that are in operation. Where this involves training related to third party systems, this should also be detailed in the DPP.
- 2.4.5.19 The safety management plan should detail how activity specific risks are managed to ALARP.

(g) job hazard analyses for the diving operation**Guidance**

- 2.4.5.20 The DPP should describe how the project will provide for Job hazard analyses (JHA) for the diving operations.
- 2.4.5.21 JHA must involve members of the workforce and encompass the activities associated with each task. As a minimum requirement all those involved in the task should understand the JHA findings, before undertaking the task.
- 2.4.5.22 JHA for the diving operations may be from generic JHAs, if so these should be reviewed and further developed (where appropriate) with the workforce in relation to specific task.

(h) an emergency response plan**Guidance**

- 2.4.5.23 The emergency response plan should reflect the combined diving contractor and operator procedures and be discussed and agreed with all relevant parties.
- 2.4.5.24 Emergency response procedures should:
- a) have clear contents and directions for use
 - b) contain up to date names and contact numbers for key positions (personnel) and organisations
 - c) clearly show the chain of command and lines of communication to be put in place during an emergency
 - d) define the responsibilities of essential personnel and outline the basic procedures for responding to emergencies
 - e) ensure all relevant personnel and organisations are kept informed of the plan; and any updates
 - f) demonstrate that all potential emergencies are identified and procedures and facilities exist for mitigating their effects. The demonstration should indicate:
 - (i) the offshore command structure to manage the emergency response on the diving project
 - (ii) the onshore command structure to co-ordinate and support the emergency response on the diving project
 - (iii) the roles and responsibilities of all key employees associated with the execution of the emergency response plan
 - (iv) how all parties, including external agencies, are consulted regarding the execution of emergency response actions for example onshore office, police, maritime agencies and other emergency services
 - (v) how conflicting demands are managed where services and equipment of one contractor are shared by a number of diving contractors, for example emergency and rescue equipment
 - (vi) the procedures for issuing and maintenance of safety equipment, emergency

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- equipment and specialised tools
 - (vii) the procedures in place for search, rescue and recovery operations
 - (viii) the availability of sufficient numbers of competent emergency trained response team personnel at all times
 - (ix) the procedures for accounting for all personnel on board in an emergency
 - (x) a schedule of regular emergency drills and exercises are conducted for each emergency scenario.
 - g) demonstrate that all personnel are competent to perform their roles during an emergency. The diving contractor should:
 - (i) establish procedures to assist employees who are exposed to critical incidents at work
 - (ii) indicate how the emergency command ability of the person-in-command of the diving project is assessed prior to appointment
 - (iii) establish the training provided and the methods of assessing competence for all key personnel
 - (iv) ensure that procedures are established for communicating emergency response arrangements to employees.
 - h) demonstrate that effective emergency response diving contractor should demonstrate how:
 - (i) emergency equipment is fit for purpose, available at appropriate locations and accessible. The demonstration should indicate contingencies in the event of damage/loss or the unavailability of equipment, for example life boats
 - (ii) emergency equipment, exit signs and alarm systems are inspected, tested and maintained at regular intervals
 - (iii) the effectiveness of the emergency response system is periodically assessed, reviewed and improved.

2.4.5.25 Hyperbaric evacuation:

- a) In an emergency, divers in saturation cannot be evacuated by the same methods as other crew members. Special arrangements and procedures should be made to evacuate them safely while keeping them under pressure, for example in a chamber or lifeboat capable of being removed from the worksite to a safe location while maintaining life support for such time as has been determined in the project risk assessment.
 - b) The exact design of such equipment and its method of deployment will depend on a number of factors including the facilities available, the number of divers to be evacuated and the location of the worksite relevant to other support facilities.
 - c) Where there is a contingency for the lifting hyperbaric rescue chamber or a hyperbaric lifeboat onto support vessels such as a hyperbaric rescue vessel or a platform there must be an engineering assessment of the adequacy of the proposed lifting system and a risk assessment of the operation.
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- d) Additional safety requirements may be necessary for those personnel conducting the evacuation.

(i) a provisions of the DSMS and the safety case that are relevant to the diving project, in particular the arrangements in the DSMS and the safety case for simultaneous operations and emergency response

Guidance

- 2.4.5.26 The DPP is the detailed plan developed to undertake a specific diving project. It must take into account the specific requirements of the particular diving job and dive site, and must form the bridging document between the operator's safety case and the DSMS.
- 2.4.5.27 The emergency response plan should reflect the combined diving contractor and operator procedures and be discussed and agreed with all relevant parties. As such, its preparation requires consultation between the operator, diving contractor and employees and any other relevant parties to the diving project.

(j) details of consultation with divers and other members of the workforce working on the project.

Guidance

- 2.4.5.28 Regulation 4.18 requires the involvement of divers and other members of the workforce in the development and revision of the diving project plan.
- 2.4.5.29 The DPP must provide details of the consultation that has taken place with divers and other members of the workforce who are involved in the diving project.
- 2.4.5.30 The regulations are based on a fundamental premise that the workforce must be involved in the process of managing the risks to which they are subjected. In relation to diving projects, this involvement may typically include some of the diving contractor's more regular supervisory and diving personnel, who would provide input, review the document and provide feedback as necessary.
- 2.4.5.31 In regard to the preparation of the DPP, it is expected that as a minimum the supervisor would be involved on a small project. The degree of employee involvement, however, should be commensurate with the project duration and complexity. The larger and/or more complicated the project, the greater the range of operational personnel that should be involved.

(2) The DPP must describe each diving operation that is part of the diving project

Guidance

- 2.4.5.32 All planned diving operations shall be identified in the project plan. Within a diving project diving operations can be made up of a number of dives or even a single dive. A diving operation is the portion of a diving project that can be supervised safely by one supervisor (see regulation 4.16 (3)).

(3) The DPP must not specify as a diving operation a task that is too complex, or too big, to be supervised safely by 1 supervisor

Guidance

- 2.4.5.33 For each diving project, the diving contractor must evaluate how much of the project can be supervised safely by one person. Enough supervisors must be appointed to cover the entire diving project so that, for example, if a diving project is taking place over such an area or time-scale that it cannot be safely controlled by one supervisor, it should be divided into separate diving operations with further supervisors being appointed.
- 2.4.5.34 The diving contractor must appoint the supervisor in writing. When more than one supervisor is on duty at the same time the diving contractor should specify in the diving project plan the areas and duration of the project that are controlled by each supervisor. In particular, each supervisor must have immediate overriding control of all safety aspects for the diving operation for which he or she is appointed. The diving contractor may also need to provide a management structure in the DPP. When a supervisor hands over supervisory responsibilities to another supervisor, this should be recorded in the diving operation record.
- 2.4.5.35 During a continuous saturation diving project two supervisors should be on each shift and will therefore be able to act as relief for each other. The name of the supervisor in control should be recorded in the diving operation record with hand-overs for relief, or other purposes, also recorded. This may be achieved by utilising a suitably qualified and appointed superintendent and a third diving supervisor.

(4) The DPP must provide for adequate communications between persons undertaking the project and any relevant:

- (a) contractor**
- (b) facility**
- (c) vessel or aircraft**
- (d) on-shore installation.**

Guidance

- 2.4.5.36 There must be established communication links between project sites, facilities and vessels and aircraft. There must be arrangements for alternative communications links in the event of an emergency. Links to shore must be provided for emergency response coordination and response.

2.4.6 REGULATION 4.17: NO DIVING WITHOUT APPROVED DIVING PROJECT PLAN

(1) A diving contractor for a project must not allow a person to dive on the project if:

- (a) there is no DPP for the project**

Guidance

- 2.4.6.1 All diving operations shall have a DPP prepared by the diving contractor in conjunction with the operator (where there is one) and any other relevant parties.

(b) the DPP has not been approved by the operator or accepted by NOPSEMA if there is no operator

Guidance

- 2.4.6.2 All diving operations shall have a DPP prepared by the diving contractor. If the project is conducted for an operator, the plan must be developed in conjunction with the operator. The

operator must approve the plan before diving may commence. If the DPP is to be revised the operator must approve any proposed revision of the DPP.

- 2.4.6.3 If there is no operator the plan must be submitted to NOPSEMA for review. If the plan meets the requirements of the regulations NOPSEMA will accept the plan. Diving may not commence unless the plan is approved by the operator or accepted by NOPSEMA.

Penalty: 50 penalty units

Guidance

- 2.4.6.4 50 penalty units \$10,500 (See full guidance at paragraph 1.1.3)

Strict liability applies to paragraphs (1)(a) and (b)

Guidance

- 2.4.6.5 See section 2.3.1.10 for guidance on the meaning of strict liability.

2.5 INVOLVEMENT OF DIVERS AND MEMBERS OF THE WORKFORCE

2.5.1 REGULATION 4.18: INVOLVEMENT OF DIVERS AND MEMBERS OF THE WORKFORCE IN DSMS AND DIVING PROJECT PLAN

(1) In developing or revising a DSMS or DPP, a diving contractor must ensure that there is effective consultation with, and participation of, divers and other members of the workforce who will, or may be, working on:
(a) the project, or
(b) in the case of a DSMS — projects for which the DSMS would be appropriate.

Guidance

- 2.5.1.1 The regulations are based on a fundamental premise that members of the workforce must be involved in the process of managing the risks to which they are subjected. In relation to diving projects, this involvement may typically include some of the diving contractor's more regular supervisory and diving personnel, who would provide input and review the relevant documents, providing feedback as necessary.
- 2.5.1.2 Workforce involvement is a requirement under the regulations for the development of a DSMS and a DPP. In order for any safety management system (SMS) to function effectively, active workforce involvement is also crucial in the formulation and implementation of the system. SMS's prepared without workforce involvement will be far less effective in the development process.
- 2.5.1.3 It is understood and accepted that offshore diving operations are normally staffed on a part time basis and that this makes it more difficult for diving contractors to involve employees in the consultation process. However, diving contractors must develop a process to make employee involvement happen in a genuine and effective manner.
- 2.5.1.4 The safety case regime has as a fundamental premise that employees must be involved in the process of managing the risks to which they are subjected. In relation to diving projects, this involvement could be in the form of the employment of some of the diving contractor's more regular diver employees who have the competence and experience to review and provide relevant feedback on the system.

- a) Employee involvement is not only a requirement of these regulations for the development of a DSMS. For any SMS to function effectively, active employee involvement is essential in the formulation and implementation of the system. Safety management systems prepared without employee involvement will be far less effective. Systems prepared in isolation and devolved to employees are unlikely to be suitable for the workforce without their involvement in the development process.
- b) In regard to the preparation of the DPP, it is expected that as a minimum the supervisor would be involved on a small project. The degree of employee involvement, however, should be commensurate with the project duration and complexity. The larger and/or more complicated the project, the greater the range of operational personnel that should be involved.

(2) When submitting a DSMS to NOPSEMA for acceptance, the diving contractor must set out in writing details of the consultation that has taken place, including:
(a) submissions or comments made during the consultation; and
(b) any changes that have been made to the DSMS as a result of the consultation.

Guidance

2.5.1.5 This requirement is a reflection of the seriousness of these regulations in regard to the members of the workforce consultation process. The diving contractor is required to document in the DSMS the details of the consultation that has taken place. This should include the details of:

- a) the members of the workforce consulted and their relevance to the DSMS
- b) details of any submissions or substantive comments relevant to the development of the DSMS made during the process
- c) any changes (including the addition of new material) made to the DSMS as a result of the consultation.

2.6 SAFETY RESPONSIBILITIES

2.6.1 REGULATION 4.19: SAFETY RESPONSIBILITIES OF DIVING CONTRACTORS

(1) A diving contractor must take all necessary steps to provide and maintain a working environment (including equipment and systems of work) that reduces risks to the safety and health of divers and other members of the workforce to ALARP.

Guidance

2.6.1.1 The diving contractor's general responsibilities are to ensure that:

- a) the diving project is properly and safely managed
- b) risk assessments have been carried out and the results recorded
- c) the place from which the diving is to be carried out is suitable and safe
- d) a suitable diving project plan is prepared which includes emergency and contingency plans. The diving project plan should be authorised and dated by a responsible person acting on behalf of the diving contractor (see section regulations 4.12–4.17)
- e) the supervisor and dive team are fully briefed on the project and aware of the contents of the diving project plan
- f) there are sufficient personnel in the dive team to enable the diving project to be carried out safely
- g) the personnel are qualified and competent (see sections 'Supervisors' and 'Divers')
- h) supervisors are appointed in writing and the extent of their control fully documented
- i) a suitable mobilisation and familiarisation program is completed by all the members of the dive team. Other personnel involved in the diving project, for example ship's crew, may also need to complete the program
- j) adequate arrangements exist for first aid and medical treatment
- k) suitable and sufficient plant is provided and that it is correctly certified and maintained (see sections 'Diving plant and equipment')
- l) the divers are medically fit to dive (see section 'Medical requirements')
- m) diving project records are kept containing the required details of the diving
- n) there is a clear reporting and responsibility structure laid down in writing; and
- o) all other relevant regulations are complied with.

2.6.1.2 Diving plant and equipment

- a) the operator must ensure that their selected diving plant is sufficient and suitable for the use to which it will be put. Further, the diving contractor must have available sufficient plant, whenever needed, which is suitable to carry out safely any action which may need to be taken in a reasonably foreseeable emergency.
- b) suitability can be assessed by the evaluation by a competent person, clear instructions or statements from the manufacturer or supplier, physical testing or previous use in similar circumstances. All items of equipment worn by the diver should, wherever possible,

comply with Australian or international standards.

2.6.1.3 Deck chambers

- a) living chambers used for saturation diving must be of a sufficient size to cater for the occupants. Typically this would mean a minimum diameter of two metres.
- b) a two-person two-compartment chamber at the worksite to provide suitable therapeutic recompression treatment should be provided for all diving projects within the scope of this guideline.
- c) can the chamber be used for the task for which it is intended? Could first aid, including CPR be performed in the chamber?
- d) for surface supplied diving operations it is expected that chambers would be twin-lock design, fitted with BIBS for use with oxygen &/or gas mixes) and of a minimum diameter of 1.5 metres for operational use and possibly 1.35 metres for standby, provided it can be used for its intended purpose.
- e) chambers should be equipped with environmental monitoring and control suitable for the intended purpose.

2.6.1.4 Gases - gases stored in high-pressure cylinders are hazardous. Gas storage areas should be adequately protected, for example by the provision of fire deluge systems. Gases used for diving should be handled with appropriate care.

2.6.1.5 Storage cylinders - gas cylinders should be suitable in design, fit for purpose and safe for use. Each cylinder should be tested and have appropriate certification issued by a competent person. Cylinders used for diving may be subjected to special conditions, for example being used underwater, and therefore need special care.

2.6.1.6 Marking and colour-coding of gas storage - accidents have occurred because of wrong gases or gas mixtures being used in a diving project. The diving contractor should ensure that all gas storage units comply with the Australian or international standards of colour-coding and marking of gas storage cylinders, quads and banks. Whatever standard is employed it should be consistent across the project and readily identifiable. Where appropriate, pipe work should also be colour-coded.

2.6.1.7 Diver's breathing gas supply systems

- a) each diver's breathing gas should be of the correct composition, quality, temperature and flow for all foreseeable situations. This includes independent primary and secondary supplies. Gas supplies should be arranged so that interruption of supplies to one diver will not affect other divers' supplies.
 - b) whatever type of breathing apparatus is in use, each diver must carry an independent reserve supply (bail-out bottle) of breathing gas that can be quickly switched to the breathing circuit in an emergency. This should have sufficient capacity to allow the diver to reach a place of safety.
 - c) an on-line oxygen analyser with a suitable alarm, for example an audible hi-lo alarm, should be fitted to the diver's gas supply line in the dive control area, even if the breathing medium is compressed air. This will assist in preventing the diver being supplied with the wrong percentage of oxygen. In addition, a carbon dioxide analyser with a suitable alarm should be fitted in all saturation diving projects using gas reclaim plant.
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- 2.6.1.8 Emergency breathing gas cylinders - when a diving basket is used by surface-supplied divers, emergency breathing gas cylinders should be supplied in the basket in a standard layout. This allows divers to access the cylinders rapidly in an emergency.
- 2.6.1.9 Oxygen
- a) pressurised oxygen can aid a serious fire or cause an explosion; it must therefore be stored and handled correctly. Any gas mixture containing more than 25% oxygen by volume should be handled as if it were pure oxygen.
 - b) any materials used in plant intended to carry oxygen should be cleaned of hydrocarbons to avoid explosions. The diving contractor should provide formal cleaning procedures for such plant together with written confirmation that such procedures have been followed.
- 2.6.1.10 Communications
- a) all divers in the water require a communication system that allows direct voice contact with the supervisor on the surface. A speech processing system is required for divers who are breathing gas mixtures containing helium because it distorts speech.
 - b) all such communications should be recorded, and the recording kept until 48 hours after the diver has returned to the surface or the saturation living chamber. If an incident occurs during the dive, the communication record should be retained for any subsequent investigation.
- 2.6.1.11 Closed diving bells
- a) divers should be able to enter and leave the bell without difficulty, and it should be possible to recover an unconscious diver in an emergency. Divers should also be able to transfer under pressure from the bell to a surface compression chamber and vice versa.
 - b) the bell requires:
 - (i) doors that can be opened from either side and act as pressure seals
 - (ii) valves, gauges and other fittings (made of suitable materials) to indicate and control the pressure within the bell. The external pressure will also need to be indicated to both the divers in the bell and the supervisor at the surface
 - (iii) adequate equipment, including reserve facilities, to supply an appropriate breathing mixture to divers in and working from the bell
 - (iv) equipment to light and heat the bell
 - (v) adequate life support system for the number of occupants
 - (vi) communications should include hard wired communications, call button, sound powered and through water communications for emergencies
 - (vii) adequate first-aid equipment, and lifting plant, to enable a person in the bell to lift an unconscious or injured diver into the bell
 - (viii) lifting gear to lower the bell to the depth of the diving project, maintain it at that depth, and raise it to the surface, without the occurrence of excessive lateral, vertical or rotational movement.
- 2.6.1.12 Breathing mixture supply - the main umbilical system of a diving bell should be fitted with suitable protective devices that will prevent uncontrolled loss of the atmosphere inside the

diving bell if any or all of the components in the umbilical are ruptured.

2.6.1.13 Emergency recovery

- a) plant and procedures should be provided to enable the diving bell to be rescued if the bell is accidentally severed from its lifting wires and supply umbilical.
- b) the bell should be equipped with a relocation device using the International Maritime Organisation (IMO) agreement recognised frequency to enable rapid location if the bell is lost.
- c) the bell should be capable of sustaining the lives of trapped divers for at least 24 hours.
- d) the bell will require an alternative method for returning to the surface if the main lifting gear fails. If weight-shedding is employed, the weights should be designed so that the divers inside the bell can shed them. This design should also ensure that the weights cannot be shed accidentally.
- e) emergency markings on hyperbaric rescue systems.
- f) in an emergency, it is possible that personnel with no specialised diving knowledge will be the first to reach a hyperbaric rescue system. To ensure that rescuers provide suitable assistance and do not accidentally compromise the safety of the occupants, an IMO standard set of markings and instructions has been agreed. Such markings should be clearly visible when the system is afloat.

2.6.1.14 Medical equipment

- a) a minimum amount of medical equipment is required at a diving site to provide first aid and medical treatment for the dive team. This minimum will depend on the type of diving and what is agreed with the diving contractor's medical adviser.
- b) particular problems exist if a diver becomes seriously ill or is badly injured while under pressure. Medical care in such circumstances is difficult and the diving contractor, in conjunction with the company's medical adviser, should prepare contingency plans for such situations.

2.6.1.15 Lifting plant to carry personnel - particular safety standards should be applied when using lifting equipment to carry personnel, including any wires used for secondary or backup lifting. These wires should be non-rotating and have an ultimate breaking strain that is at least eight times that of the normal working load. Different ratios of breaking strain to working load may be necessary in accordance with international and Australian standards.

2.6.1.16 Winches

- a) winches should be provided with independent primary and secondary braking systems. It is recommended for hydraulic winches that the secondary system operates automatically whenever the operating lever is returned to neutral or on loss of power. Both braking systems should be tested separately by a competent person.
- b) brakes should operate directly on the drum not through a gear box.
- c) winches should be governed so that they cannot overload the basket, or lifting frame.
- d) winches should not be fitted with a pawl and ratchet gear where the pawl has to be disengaged before lowering.

2.6.1.17 Diving baskets and open-bottom bells

- a) a basket or open-bottom bell, used in support of surface-supplied diving, should be able to carry at least two divers in an uncramped position. It should be designed to prevent the diver falling out and to prevent spinning and tipping. The basket should be fitted with suitable overhead protection and handholds.
- b) secondary means of recovering the divers should be provided.
- c) medical and equipment locks and diving bell trunkings.
- d) the inadvertent release of any clamping mechanism holding together two units under internal pressure may cause fatal injury to personnel both inside and outside the units. Suitable safety devices, for example pressure indicators and interlocks, should be provided to ensure that clamps cannot be released under pressure or the system pressurised before such clamps are fully secured.

2.6.1.18 Therapeutic recompression

- a) a two-person two-compartment chamber at the worksite to provide suitable therapeutic recompression treatment should be provided for all diving projects.
- b) maintenance of plant and equipment.
- c) diving plant is used under extreme conditions, - including frequent immersion in salt water. It should therefore be maintained, examined and tested regularly. The contractor must nominate a competent person to inspect plant and equipment before use to ensure that it is not damaged and it meets the contractors nominated standards.

2.6.1.19 Planned maintenance system

- a) the diving contractor should establish a system of planned maintenance for plant. Maintenance arrangements should take into account both passage of time and usage. The diving safety management system should specify what systems are used to ensure the maintenance of plant and equipment. Details of the maintenance arrangements should be entered in the diving project plan. The arrangements should identify the item of plant, the date of the check, any limitations as to use, any repairs or modifications carried out and the name of the competent person. The management of the planned maintenance system should be audited/monitored by the contractor.
- b) a plant register should be maintained at the worksite with copies of all relevant certificates of examination and tests. It should contain any relevant additional information, for example details of the materials used to construct diving bells and surface compression chambers. It should also contain any details of any design limitations for use, for example maximum weather conditions, if applicable. The contractor should be satisfied that the equipment register and certificates are valid for the plant and within date.
- c) the operator should establish that the diving contractor has maintenance systems that are functional and implemented.

2.6.1.20 Periodic examination, testing and certification - the frequency and extent of examination and testing required for all items of plant used in a diving project should be in accordance with relevant statutory provisions, national and/or international standards.

2.6.1.21 Pre-dive visual inspection - the dive team should be asked to carry out a pre-dive visual

inspection and check the plant that they are to use, to ensure that it is in serviceable condition and working.

- 2.6.1.22 Cylinders used under water - divers' emergency gas supply cylinders and other cylinders used under water can suffer from accelerated corrosion and must be regularly examined and maintained.
- 2.6.1.23 Diving bell and basket lift wires - frequent immersion in salt water, shock loading from waves, passing over multiple sheaves and so on can cause wear and deterioration to the lift wires of diving bells and baskets if they are not properly maintained. Specialised advice on maintenance must be followed to ensure that wires remain fit for purpose.

(2) A diving contractor must take all necessary steps to ensure that a diving operation for which the diving contractor is responsible is carried out in a way that complies with the accepted DSMS for the project.

Guidance

- 2.6.1.24 A DSMS is a comprehensive document, prepared by a diving contractor that details operational protocols and procedures, equipment certification, maintenance and operating procedures, risk assessment procedures. It details how a project plan is prepared and the management arrangements to ensure the continued safety of the personnel involved in the diving operations.
- 2.6.1.25 Standards and generic procedures nominated or referenced in the DSMS should be used in the project. Where there is any discrepancy from the DSMS in the project plan any change in risk must be assessed and appropriate controls put in place and the process documented.

50 penalty units

Guidance

- 2.6.1.26 50 penalty units \$10,500 (See full guidance at paragraph 1.1.3).

(3) Strict liability applies to sub regulation (2)

Guidance

- 2.6.1.27 See section 2.3.1.10 for guidance on the meaning of strict liability

2.6.2 REGULATION 4.20: SAFETY IN THE DIVING AREA

(1) At each place of diving, before the diving operation begins, the diving contractor must make available a copy of:

- (a) the instrument by which the diving supervisor was appointed**
- (b) the DSMS**
- (c) the DPP that relates to the operation.**

Guidance

- 2.6.2.1 Copies of the following documents should be available at the dive site:
- a) the letter of appointment for each diving supervisor
 - b) the current and accepted diving contractor's DSMS
 - c) the diving project plan approved by the operator or NOPSEMA as appropriate.

Penalty: 10 penalty units**Guidance**

2.6.2.2 10 penalty units \$2,100 (See full guidance at paragraph 1.1.3).

- (2) A person engaged in a diving operation must comply with:**
- (a) An instruction given by a diving supervisor for the diving operation about a matter in the DPP**
 - (b) a direction under sub regulation 4.23(3) given to the person by a diving supervisor for the diving operation.**

Guidance

2.6.2.3 The supervisor is entitled to give reasonable instructions in relation to health and safety to any person taking part in the diving operation. These orders take precedence over any company hierarchy and for example, could be related to instructing regarding:

- a) unnecessary personnel to leave a control area
- b) personnel (nominated in the plan) to operate plant and so on.

2.6.2.4 The supervisor retains overall control of chamber operations when a diver inside a deck chamber requires medical treatment, whether medical personnel are present or are communicating by long distance.

2.6.2.5 There will be times (for example during diving operations from a vessel), that the supervisor must liaise closely with other personnel, such as the vessel master or the officer of the watch. In such circumstances, the supervisor should recognise that the vessel master has responsibility for the overall safety of the vessel and its occupants.

Penalty: 10 penalty units**Guidance**

2.6.2.6 10 penalty units \$2,100 (See full guidance at paragraph 1.1.3).

(3) Strict liability applies to sub regulations (1) and (2).**Guidance**

2.6.2.7 See section 2.3.1.10 for guidance on the meaning of strict liability.

2.6.3 REGULATION 4.21: DIVING DEPTHS

- (1) The operator for a surface-oriented diving operation, involving the use of air or mixed gas as a breathing medium, must not allow the operation to be carried out at a depth of more than 50 metres.**

Guidance

2.6.3.1 The operator cannot approve a diving project plan where surface supplied diving is planned to a depth deeper than 50 metres. Surface supplied diving techniques should not be the primary contingency for emergency operations deeper than 50 metres.

2.6.3.2 Surface supplied diving, in excess of 50 metres, should not be the primary contingency procedure for emergency operation requiring intervention deeper than 50 metres.

Penalty: 100 penalty units**Guidance**

2.6.3.3 100 penalty units \$21,000 (See full guidance at paragraph 1.1.3).

(2) The diving contractor for a surface-oriented diving operation, involving the use of air or mixed gas as a breathing medium, must not allow the operation to be carried out at a depth of more than 50 metres.

Guidance

2.6.3.4 The diving contractor cannot propose a diving project plan where surface supplied diving is planned to a depth deeper than 50 metres.

Penalty: 50 penalty units**Guidance**

2.6.3.5 50 penalty units \$10,500 (See full guidance at paragraph 1.1.3).

(3) The operator for a diving operation that is carried out at a depth of more than 50 metres must ensure that the diving operation involves the use of:
(a) a closed diving bell and a suitable mixed gas breathing medium
(b) a manned submersible craft.

Guidance

2.6.3.6 Except in cases of therapeutic recompression, the operator must ensure that operational dives beyond a depth of 50 metres are planned for by:

- a) using a diving bell (closed-bell/or submersible decompression chamber)
- b) that the breathing medium contains a suitable inert gas that mitigates the risk of narcosis and the oxygen concentration is limited so as to prevent the potential for oxygen toxicity.

Penalty: 100 penalty units**Guidance**

2.6.3.7 100 penalty units \$21,000 (See full guidance at paragraph 1.1.3).

(4) The diving contractor for a diving operation that is carried out at a depth of more than 50 metres must ensure that the diving operation involves the use of:
(a) A closed diving bell and a suitable mixed gas breathing medium; or
(b) a manned submersible craft.

Guidance

2.6.3.8 The diving contractor must ensure that planned operational dives beyond a depth of 50 metres:

- a) are carried out using a diving bell (closed-bell/or submersible decompression chamber) and
- b) the breathing medium contains a suitable inert gas that mitigates the risk of narcosis and the oxygen concentration is limited so as to prevent the potential for oxygen toxicity.

2.6.3.9 This does not apply to therapeutic recompression.

Penalty: 50 penalty units

Guidance

2.6.3.10 50 penalty units \$10,500 (See full guidance at paragraph 1.1.3).

NOTE: Section 10.3 of the criminal guideline provides a defense of sudden or extraordinary emergency.

Guidance

2.6.3.11 It is a defense to an offence under regulation 4.21 (including all subregulations) if the dive were conducted contrary to the provisions of the regulation for the purposes of rendering assistance during a sudden or extraordinary emergency when no other alternative was possible.

2.7 DIVING SUPERVISORS

2.7.1 REGULATION 4.22: APPOINTMENT OF DIVING SUPERVISORS

(1) The diving contractor responsible for a diving operation must appoint, in writing, one or more diving supervisors to ensure that there is a diving supervisor to supervise all diving that is carried out as part of the operation.

NOTE: Sub regulation 4.16(3) limits the scope of a diving operation that can be supervised by one diving supervisor.

Guidance

- 2.7.1.1 The diving contractor must appoint in writing at least one supervisor for each diving operation.
- 2.7.1.2 Note that regulation 4.16 (3) provides that the diving project plan must not specify as a diving operation a task that is too complex, or too big, to be supervised safely by one supervisor.
- 2.7.1.3 For each diving project, the diving contractor must evaluate how much of the project can be supervised safely by one person. Enough supervisors must be appointed to cover the entire diving project. For example, if a diving project is taking place over such an area, time-scale, range of depths or number of personnel that it cannot be safely controlled by one supervisor, it should be divided into separate diving operations with further supervisors being appointed.
- 2.7.1.4 Where a diving project incorporates around the clock diving, a supervisor must be appointed for each shift. When more than one supervisor is on duty at the same time, the diving contractor should specify in the diving project plan the areas and duration of the project that are controlled by each supervisor.
- 2.7.1.5 In particular, each supervisor must have immediate overriding control of all safety aspects for the diving operation for which he or she is appointed.
- 2.7.1.6 The diving contractor may also need to provide a management structure in the diving project plan. When a supervisor hands over supervisory responsibilities to another supervisor, this should be recorded in the diving operation record.

(2) A diving contractor must not appoint, as a diving supervisor, a person who is not:
(a) qualified as a supervisor under ADAS
(b) competent to supervise the operation.

Guidance

- 2.7.1.7 The Australian Diver Accreditation Scheme (ADAS) is the Australian national occupational diver certification scheme.
- 2.7.1.8 The regulations require that diving supervisors and divers must be accredited under the ADAS scheme in order to undertake offshore petroleum and greenhouse gas storage related diving operations. Under the ADAS scheme there are a number of qualifications that cater for the variety of disciplines within a diving team, (e.g. air supervisor, air diver, saturation supervisor etc.). These qualifications are valid for a prescribed period, following which renewal must be applied for. Diving contractors must therefore ensure the ADAS qualifications held by diving supervisors and divers are appropriate for the intended activity and valid.
- 2.7.1.9 Supervisors should be suitably qualified for the diving techniques to be used during diving operations on which they will be employed. For example, a supervisor qualified to supervise an air diving operation only, is not qualified to supervise a bell operation whereas a bell diving supervisor is qualified to take charge of both types of operation. Any person appointed as a supervisor must therefore possess the correct qualification applicable to the planned diving operation.
- 2.7.1.10 Supervisors do not require a certificate of medical fitness to dive. However as a minimum requirement they should be certified fit for general offshore duties.
- 2.7.1.11 As the supervisor is the person responsible for divers under his or her control (including any divers undergoing hyperbaric treatment), the supervisor requires the knowledge and experience to make competent assessments in situations that arise. It is expected that supervisors will have completed a diver medical technician course during their career. However, the diving contractor must assess the first-aid capabilities of all personnel in the dive team and the role that the supervisor would play in an emergency.
- 2.7.1.12 Therefore in addition to possessing an appropriate qualification, the diving contractor must consider the competence of a person before appointing them as a supervisor. When considering competence, the diving contractor should consider whether the person is knowledgeable; practical; reliable; capable of conducting the diving operation in a safe manner; capable of communicating with and managing members of the diving team appropriately; capable of acting sensibly in an emergency; and so on. The supervisor must have adequate practical and theoretical knowledge and experience of the diving techniques to be used in the diving operation for which they are appointed.
- The diving contractor will be in a good position to decide on the person's competence if the candidate has worked for the company for some time. If the diving contractor does not know the person, it will be necessary to make appropriate inquiries concerning knowledge and experience.
- 2.7.1.13 Existing air diving supervisors, life-support technicians and bell diving supervisors who are currently qualified under IMCA are able to qualify under ADAS so as long as IMCA standards are maintained at the level of or higher than those currently in existence. ADAS has in place arrangements to recognise divers and supervisors who can demonstrate that they possess the requisite competencies to meet the agreed ADAS standards.

(3) Strict liability applies to sub regulation (2)**Guidance**

2.7.1.14 See section 2.3.1.10 for guidance on the meaning of strict liability.

2.7.2 REGULATION 4.23: DUTIES OF DIVING SUPERVISORS**(1) The duties of a diving supervisor for a diving operation are:****(a) to ensure that the diving operation is carried out:**

- (i) as far as reasonably practicable without risk to the health or safety of anybody taking part in it or of anyone else who may be affected by it**

Guidance

2.7.2.1 The supervisor has a duty to direct the diving operation safely. It should be noted that this requirement places a responsibility on the diving supervisor to ensure that diving operations are carried out – as far as reasonably practicable - without risk to participants or those that may be affected by the operation. To carry out a duty as far as reasonably practicable means that that the degree of risk in a particular activity or environment can be balanced against the time, trouble, cost and physical difficulty of taking measures to avoid the risk. If these are so disproportionate to the risk that it would be unreasonable for the people concerned to have to incur then to prevent it, they are not obliged to do so.

2.7.2.2 The greater the risk, the more likely it is that it is reasonable to go to very substantial expense, trouble and invention to reduce it. But if the consequences and the extent of a risk are small, insistence on great expense would not be considered reasonable. It is important to remember that the judgement is an objective one and the size or financial position of the employer is immaterial.

2.7.2.3 If a supervisor does not agree with the size or complexity of the portion of the diving project allocated as his or her operation to supervise, the supervisor should raise the matter with the diving contractor. A supervisor should not participate in a diving operation that he or she considers to be unsafe because, for example, in the supervisor's opinion it is too large for one person to supervise safely or that the supervisor knows that he or she is not competent to supervise.

(ii) in accordance with the law**Guidance**

2.7.2.4 It would seem self-evident that all persons have a duty to comply with the law in all circumstances. This regulation, however, reinforces this self-evident truth by re-stating it in these regulations as a mandatory duty of the supervisor. The supervisor has a specific duty whilst undertaking the supervision of a diving operation to do so in compliance with all relevant law – not just these regulations. Whilst this might seem an extra responsibility placed on the supervisor, it is in reality no more than a reminder of a normal level of duty.

(iii) in accordance with the accepted DSMS for the operation**(iv) in accordance with the relevant DPP.****Guidance**

2.7.2.5 Supervisors must ensure that diving operations are carried out safely and in line with the diving contractor's policies, standards, practices and procedures as accepted by NOPSEMA; and the

site-specific measures agreed between the diving contractor and the operator. To this end, they must conduct the diving operation in accordance with the requirements of the DSMS, the diving project plan and the site-specific risk assessment. They should ensure that:

- a) as far as is reasonably practicable, the diving operation that they are being asked to supervise complies with the requirements of this guidance
- b) the proposed dive site and the water and weather conditions are suitable
- c) the risk assessment is still current for the circumstances prevailing on the day and during the dive
- d) they understand their own areas and levels of responsibility and who is responsible for any other relevant areas
- e) the personnel that they are to supervise are appropriately qualified and are competent to carry out the work required of them. They should also check, as far as is reasonable, that these personnel are fit, and in possession of all necessary certificates, that is medical fitness to dive, diver's certificate and first aid
- f) the diving project plan and arrangements for dealing with foreseeable emergencies are clearly understood by all those engaged in the diving operation. This would normally be assured by a pre-dive briefing session with all those involved and, if required, suitable training
- g) the plant that they propose to use for any particular operation is adequate, safe, properly certified and maintained. They should ensure that the plant is adequately inspected by themselves or another competent person before its use. Such inspections should be documented, for example on a prepared checklist, and recorded in the diving operation record
- h) the possible hazards from complex or potentially hazardous plant have been evaluated and are fully understood by all relevant parties and that, if required, training is given. This should be carried out as part of the risk assessment during the planning of the operation and should be documented. If the situation changes, the risk assessment should be re-evaluated. Supervisors should ensure that documentation on the risk assessment of the plant is available and follow any guidance contained in the documentation, for example a manufacturer's instructions
- i) all relevant people are aware that a diving operation is to start or continue. They should also obtain any necessary permission before starting or continuing the operation
- j) they have adequate means of communication with any personnel under their supervision. So long as they have such communication they do not need to be able to operate physically every control under their responsibility. For example, a supervisor should be able to supervise adequately the raising and lowering of a diving bell if there is a direct audio link with the winch operator, even though the winch may be located where the supervisor cannot see it or have ready access to it
- k) proper records of the diving operation are maintained. This must include the particulars specified in the diving operation log (dive log or diving operations record - Regulation 32)
- l) they are able to see divers in the bell or the compression chamber during saturation operations

- m) they maintain the diving operation record throughout the diving operation for which they are responsible.

(b) to countersign entries about the operation in divers' log books.

Guidance

- 2.7.2.6 The diving supervisor must check that the entries recorded in the diver's log are an accurate record of the dive and then countersign the page to certify to that effect.
- 2.7.2.7 Contractors should have mechanisms in place to ensure that divers' logbooks can be signed off if supervisors leave the site unexpectedly. This is often the case when for logistical reasons crew may be changed out at short notice.

(c) if there is an operator for the diving project—to report to the operator, during the operation, any of the following:

- (i) the death of, or serious personal injury to, a person**
- (ii) the incapacitation of a person that prevents the person from performing work for a period of 3 or more days**
- (iii) an event that could reasonably have led to a consequence of the type mentioned in subparagraph (i) or (ii)**
- (iv) a decompression illness**
- (v) a pulmonary barotrauma**
- (vi) a case of omitted decompression**
- (vii) an occurrence for which the standby diver is deployed for an emergency, except for the purposes of training, exercises or drills**
- (viii) a failure of life support equipment or man-riding equipment.**

Guidance

- 2.7.2.8 Chapter 2, part 4 regulation 2.42 of the regulations identifies that the operator has the primary responsibility to notify and report accidents and dangerous occurrences that occur on the facility or within its vicinity to NOPSEMA.
- 2.7.2.9 It is important to note that the diving supervisor also has a duty to report to the operator details of accidents and incidents as listed above. Whilst the regulation does not specify a deadline for which the information must be supplied by the supervisor to the operator, it should be provided in a timescale that allows the operator to meet their obligations under regulation 2.42.

(2) A diving supervisor who fails to carry out a duty imposed on him or her by subregulation (1) is guilty of an offence.

Guidance

- 2.7.2.10 These regulations place legal duties on the supervisor. If the supervisor fails to carry out those duties as required by these Regulations and in a reasonable manner, the supervisor is contravening the law and may be guilty of an offence.

Penalty: 20 penalty units

Guidance

- 2.7.2.11 20 penalty units \$4,200 (See full guidance at paragraph 1.1.3).

(3) A diving supervisor, when supervising a diving operation, may give such reasonable directions to any person taking part in the operation as are necessary to enable the diving supervisor to comply with subparagraph (1)(a)(i).

Guidance

- 2.7.2.12 The supervisor is empowered by this regulation to give reasonable orders in relation to health and safety to any person taking part in the diving operation. These orders take precedence over any company hierarchy. These orders could include instructing unnecessary personnel to leave a control area, instructing personnel to operate plant and so on.
- 2.7.2.13 The supervisor remains in overall control when a diver inside a deck chamber requires medical treatment, whether medical personnel are present or are communicating by long distance.
- 2.7.2.14 The authority provided by the regulation is restricted to persons taking part in the diving operation. Whilst there will be many occasions where persons outside of the operation will need to do or not so things that impinge on the health and safety of divers, the supervisor is not empowered to direct such persons. Compliance in these incidents must be through directions by the person empowered to be in overall charge of the project or through a process of negotiation.

(4) A diving supervisor must not dive while he/she is on duty as diving supervisor.

Guidance

- 2.7.2.15 As noted above, the supervisor is placed under a legal duty by these regulations to ensure the health and safety of those persons under his or her control. This regulation requires the supervisor, whilst on duty as the supervisor of a diving operation, not to dive. This does not prevent the supervisor - all other things being equal - from diving if he or she has been relieved from duty as a supervisor and replaced by another properly appointed and qualified supervisor.

NOTE: Section 10.3 of the criminal guideline provides a defense of sudden or extraordinary emergency.

Guidance

- 2.7.2.16 It is a defense to an offence under this regulation if the dive were conducted contrary to the provisions of the Regulation for the purposes of rendering assistance during a sudden or extraordinary emergency when no other alternative was possible.

Penalty: 20 penalty units

Guidance

- 2.7.2.17 20 penalty unit \$4,200 (See full guidance at paragraph 1.1.3).

(5) A diving supervisor for a diving operation must tell each person who takes part in the operation any instruction, in the DPP for the operation that applies to the person.

Guidance

- 2.7.2.18 This regulation places a duty on the supervisor to ensure that all persons involved in the diving operation are thoroughly and adequately briefed and provided with all relevant information that is necessary to enable those persons to safely carry out their part in the operation.

Penalty: 20 penalty units

Guidance

2.7.2.19 20 penalty units \$4,200 (See full guidance at paragraph 1.1.3).

(6) In this regulation:

Man-riding equipment includes any of the following:

- (a) an air stage
- (b) a wet bell
- (c) a closed bell
- (d) a guide wire system.

Note 1: If there is no operator for a diving project, State/Northern Territory laws, as applied by section 80 of the OPGGS Act, may require the reporting of accidents and incidents.

Note 2: regulation 4.27 requires a diving supervisor to maintain a diving operations record.

Guidance

2.7.2.20 During diving operations man riding equipment is used to transport divers to the work site subsea. Man riding equipment will also include launch and recovery systems, lift wires and secondary lift wires such as guide wires. During a hyperbaric evacuation and rescue the hyperbaric rescue chamber or self-propelled hyperbaric life boat may be required to be launched and recovered which will require man riding equipment.

2.8 START-UP NOTICE

2.8.1 REGULATION 4.24: START-UP NOTICE

(1) In this regulation:

'start-up notice', for a diving project, means a written notice, signed by or for the person giving it, dated and containing the following information:

- (a) the name, address and telephone number of the diving contractor for the project
- (b) the name, address and telephone number of a person who can be contacted by NOPSEMA at any time during the project
- (c) the date when diving is expected to begin
- (d) the expected duration of the project
- (e) the location of the project
- (f) the depth to which divers will dive
- (g) the purpose of the diving project
- (h) the estimated number of people to be engaged in the project
- (i) the breathing mixture to be used
- (j) the title, document number and revision number of the diving project plan for the project.

(2) The operator for a diving project must not allow diving on the project to begin if the operator has not given a start-up notice to NOPSEMA:

- (a) at least 14 days before the day when diving is to begin
- (b) on another day as agreed between NOPSEMA and the operator.

Guidance

- 2.8.1.1 The start-up notice is intended to ensure that NOPSEMA is notified about and is aware of each and every diving project that is being undertaken within NOPSEMA's jurisdiction. This allows NOPSEMA to plan for and undertake appropriate auditing and inspection of diving operations.
- 2.8.1.2 In most instances the information supplied with the start-up notice will be the all the information that NOPSEMA will have regarding the project, as in normal circumstances NOPSEMA does not receive the DPP. This information supplied in the start-up notice therefore needs to be sufficient to allow NOPSEMA to make a decision whether or not to undertake a visit to the dive site and whether or not to request a copy of the diving project plan.
- 2.8.1.3 Diving must not commence until a start-up notice has been given to NOPSEMA.
- 2.8.1.4 The start-up notice needs to be supplied to NOPSEMA sufficiently in advance of the commencement date of the project in order for NOPSEMA to arrange a site visit if that is decided. With big and/or complex projects with long lead times, the operator might well notify NOPSEMA well in advance of the project to facilitate liaison or consultation with NOPSEMA regarding specific aspects of the project.
- 2.8.1.5 At the other end of the scale, where diving projects are in urgent response to an unplanned event, and need to be undertaken immediately or as soon as possible, it may not be possible to notify NOPSEMA at least 14 days before diving is to begin. In these circumstances, NOPSEMA should be notified as soon as possible after the decision is made to mobilise but before commencing diving.
- 2.8.1.6 Failure to comply with this regulation is an offence and may result in a penalty of up to 100 penalty units.

Penalty: 100 penalty units

Guidance

- 2.8.1.7 100 penalty units \$21,000 (See full guidance at paragraph 1.1.3).

(3) If there is no operator for a diving project, the diving contractor must not allow diving on the project to begin if the diving contractor has not given a start-up notice to NOPSEMA
(a) at least 14 days before the day when diving is to begin
(b) on another day as agreed between NOPSEMA and the diving contractor.

Guidance

- 2.8.1.8 There are a small number of occasions envisaged where a diving project will be carried out under these regulations without the involvement of an operator. This is to cater for such a circumstance, and under this regulation the diving contractor has the responsibility to notify NOPSEMA.
- 2.8.1.9 The start-up notice is intended to ensure that NOPSEMA is notified about and is aware of each and every diving project that is being undertaken within NOPSEMA's jurisdiction. This allows NOPSEMA to undertake appropriate auditing and inspection of diving operations.
- 2.8.1.10 Diving must not commence until a start-up notice has been given to NOPSEMA.
- 2.8.1.11 The start-up notice needs to be supplied to NOPSEMA sufficiently in advance of the

commencement date of the project in order for NOPSEMA to arrange a site visit if that is decided. With big and/or complex projects with long lead times, the diving contractor might well notify NOPSEMA well in advance of the project to facilitate liaison or consultation with NOPSEMA regarding specific aspects of the project.

- 2.8.1.12 At the other end of the scale, where diving projects are in urgent response to an unplanned event, and need to be undertaken as soon as possible, it may not be possible to notify NOPSEMA 14 days before diving is to begin. In these circumstances, NOPSEMA should be notified as soon as possible after the decision is made to mobilise.

Penalty: 50 penalty units

Guidance

- 2.8.1.13 50 penalty units \$10,500 (See full guidance at paragraph 1.1.3).

2.9 DIVING OPERATIONS

2.9.1 REGULATION 4.25: DIVERS IN DIVING OPERATIONS

(1) A diving contractor for a diving operation must not allow a person to dive in the diving operation if the person is not competent to carry out safely any activity that is reasonably likely to be necessary while the person is taking part in the operation.

Guidance

- 2.9.1.1 'Competent' in this context means that -in relation to the task that is to be performed - the diver is a person who has acquired through training, qualifications or experience, or a combination of them, the knowledge and skills to safely carry out the task.
- 2.9.1.2 This regulation is consistent with the general requirement of occupational health and safety law that employers must ensure that any person who may be exposed to a risk to health and safety at a place of work is provided with any information, instruction and training necessary to ensure the persons health and safety. It recognises that a diver may be a qualified diver, and possess appropriate general diving competence, but not have the specific knowledge, skills or experience to safely carry out the particular task to be conducted during the operation.
- 2.9.1.3 This regulation places a specific responsibility on the diving contractor for a diving project to ensure that any diver taking part in the project is competent to safely undertake all aspects of the diving operation.
- 2.9.1.4 Possessing an ADAS qualification does not mean that a person holding that qualification is necessarily competent to carry out every type of diving work falling within the relevant class of diving. The qualification must be appropriate to:
- any activity the diver may reasonably expect to carry out while taking part in the diving project
 - the objectives of the diving project
 - the required diving technique
 - the level of competence required to undertake the assigned duty

- e) the findings of the risk assessment
- f) any restriction and/or limitation stated on a particular diving qualification certificate, which must be strictly complied with such as: diving technique; type of equipment; breathing gases; and maximum depth.

Penalty: 50 penalty units

Guidance

2.9.1.5 50 penalty units \$10,500 (See full guidance at paragraph 1.1.3).

(2) A diving supervisor for a diving operation must not allow a person to dive in the diving operation if the person is not competent to carry out safely any activity that is reasonably likely to be necessary while the person is taking part in the operation.

Guidance

- 2.9.1.6 “Competent” in this context means that -in relation to the task that is to be performed - the diver is a person who has acquired though training, qualifications or experience, or a combination of them, the knowledge and skills to safely carry out the task.
- 2.9.1.7 This regulation is consistent with the general requirement of occupational health and safety law that employers must ensure that any person who may be exposed to a risk to health and safety at a place of work is provided with any information, instruction and training necessary to ensure the persons health and safety.
- 2.9.1.8 It recognises that a diver may be have the required diving qualification, and possess appropriate general diving competence, but not have the specific knowledge, skills or experience to safety carry out the particular task to be undertaken.
- 2.9.1.9 This regulation places a specific responsibility on the supervisor for a diving project to ensure that any diver taking part in the project is competent to safely undertake all aspects of the diving operation.
- 2.9.1.10 Assessing a person’s competence to undertake a particular diving operation should include, but is not limited to the following criteria:
 - a) Any activity the diver may reasonably expect to carry out while taking part in the diving project
 - b) Dealing with all reasonably foreseeable emergencies
 - c) The objectives of the diving project
 - d) The required diving technique (e.g. surface, saturation or manned submersible craft/hard suit diving)
 - e) The level of competence required to undertake the assigned duty; and
 - f) Any restriction and/or limitation stated on a particular diving qualification certificate, which must be strictly complied with such as: diving technique; type of equipment; breathing gases; and maximum depth.

Penalty: 20 penalty units

Guidance

2.9.1.11 20 penalty units \$4,200 (See full guidance at paragraph 1.1.3).

(3) A diving contractor for a diving operation must not allow a person to dive in the diving operation if the person does not have a current diving qualification under ADAS to carry out any activity that is reasonably likely to be necessary while the person is taking part in the operation.

Guidance

2.9.1.12 This regulation requires the diving contractor for a diving operation not to allow any diver to dive in the operation unless the diver has the appropriate level of ADAS diving qualification, taking into consideration the depth of the dive and the breathing medium to be used, and that the qualification is current.

Penalty: 50 penalty units

Guidance

2.9.1.13 50 penalty units \$10,500 (See full guidance at paragraph 1.1.3).

(4) A diving supervisor for a diving operation must not allow a person to dive in the diving operation if the person does not have a current diving qualification under ADAS to carry out any activity that is reasonably likely to be necessary while the person is taking part in the operation.

Guidance

2.9.1.14 This regulation requires the supervisor for a diving operation not to allow any diver to dive in the operation unless the diver has the appropriate level of ADAS diving qualification, taking into consideration the depth of the dive and the breathing medium to be used, and that the qualification is current.

Penalty: 20 penalty units

Guidance

2.9.1.15 20 penalty units \$4,200 (See full guidance at paragraph 1.1.3).

(5) A diving contractor for a diving operation must not allow a person to dive in the diving operation if the person does not have a valid medical certificate.

NOTE: For the meaning of valid medical certificate see regulation 4.26.

Guidance

2.9.1.16 This regulation requires the diving contractor for a diving operation not to allow any diver to dive in the operation unless the diver has a valid medical certificate (as defined in regulation 4.26).

Penalty: 50 penalty units

Guidance

2.9.1.17 50 penalty units \$5,500 (See full guidance at paragraph 1.1.3).

(6) A diving supervisor for a diving operation must not allow a person to dive in the diving operation if the person does not have a valid medical certificate.

NOTE: For the meaning of valid medical certificate see regulation 4.26.

Guidance

- 2.9.1.18 This regulation requires the supervisor for a diving operation not to allow any diver to dive in the operation unless the diver has a valid medical certificate (as defined in regulation 4.26).

Penalty: 20 penalty units

Guidance

- 2.9.1.19 20 penalty units \$2,200 (See full guidance at paragraph 1.1.3).

(7) Sub regulations (3), (4), (5) and (6) do not apply if the person:
(a) is diving in a manned submersible craft
(b) is diving to provide emergency medical care to an injured person in a chamber.

Guidance

- 2.9.1.20 Persons undertaking underwater operations inside a manned submersible craft or providing emergency medical care within a chamber do not require an ADAS qualification or a diving medical certificate.
- 2.9.1.21 However, it is strongly recommended that any person who undertakes either of these activities is both appropriately competent and medically fit for the task and should therefore conform to appropriate industry standards as applicable.

(8) Strict liability applies to the circumstance in sub regulations (3), and (4) that the person does not have a current diving qualification under ADAS.
(9) Strict liability applies to the circumstance in sub regulations (5) and (6) that the person does not have a valid medical certificate.

Guidance

- 2.9.1.22 See section 2.3.1.10 for guidance on the meaning of strict liability.

2.9.2 REGULATION 4.26: MEDICAL CERTIFICATES

(1) A diver's medical certificate is valid if it satisfies sub regulation (2) or (3).
(2) A diver's medical certificate satisfies this sub regulation if:
(a) it certifies that, at the time it was given, the diver was fit to dive in accordance with the fitness requirements in AS/NZS 2299

Guidance

- 2.9.2.1 A diver's medical examination must be based on the 'Guidance for Medical Practitioners' (Appendix M of AS/NZS 2299.1:2015) and the 'Diving Medical Examination' form (Appendix N of AS/NZS 2299.1:2015).
- 2.9.2.2 The medical practitioner who conducts the medical examination and completes the certificate must meet the requirements outlined under regulation 4.26(2)(c) (see below).

(b) it is not more than 1 year old**Guidance**

- 2.9.2.3 The certificate of medical fitness to dive is a statement of the diver's fitness to perform work underwater, and is valid for as long as the doctor certifies, up to a maximum of 12 months.
- 2.9.2.4 Persons who dive in a diving project and who consider themselves unfit for any reason, for example fatigue, minor injury, recent medical treatment, must inform their supervisor. Even a minor illness, such as the common cold or a dental problem, can have serious effects on a diver under pressure, and should be reported to the supervisor before the start of a dive. Supervisors should seek guidance from the diving contractor or the company's medical adviser if there is doubt about that person's fitness to dive.
- 2.9.2.5 Before any dive not involving saturation, the supervisor should ask the divers to confirm that they are fit to dive and record this confirmation in the diving operation record.
- 2.9.2.6 Before saturation exposure, the supervisor should ensure that a diver has had a medical check within the previous 24 hours. This will confirm, as far as reasonably practicable, the diver's fitness to enter saturation. A nurse, doctor or diver medic will carry out the medical check. The content of the medical check and the format of the written record may be decided by the diving contractor, and should be specified in the diving contractor's diving manual.

(c) The medical practitioner who gave it:

- (i) Is accredited by the South Pacific Underwater Medicine Society, the Health and Safety Executive of the United Kingdom or the Underwater Hyperbaric Medicine Society.**

Guidance

- 2.9.2.7 Medical practitioners accredited by the following organisations to perform occupational diving medicals on divers are deemed to comply with these regulations:
- a) the South Pacific Underwater Medicine Society (SPUMS)
 - b) the Health and Safety Executive of the United Kingdom
 - c) or the Underwater Hyperbaric Medicine Society.
- 2.9.2.8 SPUMS publishes a list of its members who are medical practitioners with training in underwater medicine. This list is updated regularly, and is available on the SPUMS website:
<http://www.spums.org.au/diving-doctors>

- (ii) has completed an appropriate course of training conducted by the Royal Australian Navy or the Royal Adelaide Hospital.**

Guidance

- 2.9.2.9 Medical practitioners who have successfully completed appropriate courses conducted by the organisations listed in 2.9.2.7 above are deemed to comply with these regulations.
- 2.9.2.10 SPUMS publishes a list of approved courses in diving and hyperbaric medicine for medical practitioners.

(iii) has been approved under the Australian Diver Accreditation Scheme (ADAS)

Guidance

- 2.9.2.11 ADAS may, on proper advice, undertake to certify in writing that such medical practitioners comply with these regulations and may perform occupational diving medicals on divers.
- 2.9.2.12 The ADAS website provides further guidance on the medical fitness to dive requirements, and a link to a list of accredited medical practitioners on the SPUMS website.

(d) before giving it, the medical practitioner examined the diver in accordance with the Schedule of Minimum Examination Requirements in AS/NZS 2299.

Guidance

- 2.9.2.13 A diver's medical examination must be based on the 'Guidance for Medical Practitioners' (Appendix M of AS/NZS 2299.1:2015) and the 'Diving Medical Examination' form (Appendix N of AS/NZS 2299.1:2015).

(e) immediately after the examination, the medical practitioner entered the certificate in the diver's log book.

Guidance

- 2.9.2.14 The doctor completing the examination immediately entered the details of the examination into the diver's log book, the diver's permanent record. This must include a certificate of fitness, unfitness or temporary unfitness pending further examination.

(3) A diver's medical certificate satisfies this sub regulation if it is valid for the United Kingdom under any law of the United Kingdom relating to the medical fitness of persons employed as divers.

NOTE: At present, the relevant law for the United Kingdom is regulation 15 of the Diving at Work Regulations 1997.

Guidance

- 2.9.2.15 Occupational diving medical certificates issued by 'Approved medical examiner of divers' (AMED) registered with the UK Health and Safety Executive, in accordance with the United Kingdom Diving at Work Regulations 1997 – SI 1997 No. 2776, for the purposes of completing occupational diving medical examinations are deemed acceptable.

2.10 RECORDS

2.10.1 REGULATION 4.27: DIVING OPERATIONS RECORD

(1) A diving supervisor for a diving operation must ensure that a diving operations record for the operation is maintained in the form required by sub regulations (2) and (3)

Guidance

- 2.10.1.1 Under the regulations every diving supervisor must ensure that a record of every diving operation supervised by that person is kept in the form detailed in the sub-regulations (2) and (3). Once this document contains information relevant to a diving operation it becomes a legal document and can be used as evidence of what did or did not occur during a particular operation. To that end, diving supervisors must ensure that the record is a true and

comprehensive account of the operation.

Penalty: 50 penalty units

Guidance

2.10.1.2 50 penalty units \$10,500 (see full guidance at paragraph 1.1.3).

(2) A diving operations record:

- (a) must be kept in a hard-covered form bound in such a way that its pages cannot easily be removed; or**
- (b) if it is in a form that has multiple copies of each page, must be bound so that at least 1 copy of each page cannot easily be removed.**

(3) The pages of a diving operations record must be serially numbered.

Guidance

2.10.1.3 This regulation is intended to ensure that a detailed permanent record is kept of every diving operation conducted by the diving contractor. A diving operations record must be kept in a hard bound (i.e. pages are not loose leaf) record book with the pages numbered serially. If the form of the record is multiple self-carbon pages – the copies of which are perforated for easy removal - the original page must be not be perforated and designed to be retained in the record book.

(4) The diving supervisor for a diving operation must ensure that an entry is made in the diving operations record for each day when diving for the operation takes place, with the following information about the diving operation on that day:

- (a) the date to which the entry relates**
- (b) the diving contractor's name and address**
- (c) the name of the diving supervisor, or the names of the diving supervisors, who supervised the operation**
- (d) the location of the diving operation (including, if the diving was done from a vessel or installation, its name)**
- (e) the name of each person who took part in the operation (whether as a diver or as a member of a dive team)**
- (f) the name of each person who took part as a diver or stand-by diver in the operation**
- (g) the purpose of the diving operation**
- (h) for each diver — the breathing apparatus and breathing mixture used**
- (i) for each diver — the times at which the diver left the surface, reached the bottom, left the bottom and arrived at the surface again, and bottom time**
- (j) for each diver — the maximum depth reached**
- (k) the decompression schedule followed including, for each diver, details of the depths and the duration at each depth during decompression**
- (l) details of any emergency or incident of special note that happened during the operation**
- (m) details of any decompression illness and any treatment given**
- (n) details of any significant defect or significant failure of diving plant or equipment used in the operation**
- (o) details of any environmental factors relevant to the operation**
- (p) anything else that is likely to affect the health or safety of anybody who took part in the operation.**

Guidance

2.10.1.4 The diving supervisor must ensure that a record is kept of each day of a diving operation,

containing all the information specified in this regulation.

Penalty: 10 penalty units

Guidance

2.10.1.5 10 penalty units \$2,100 (See full guidance at paragraph 1.1.3).

(5) A diving supervisor responsible for a diving operation must sign:

(a) either:

- (i) if the record is in a form that has multiple copies of each page — the original of each page of each entry**
- (ii) in any other case — each page of each entry**

Guidance

2.10.1.6 The diving supervisor must sign each page of the record of diving to signify that the information entered into the record is true and correct. If the pages are in the form of multiple self-carbon pages, only the original top page must be signed.

(b) if there are 2 or more diving supervisors for the operation — those parts of the entry that relate to diving work that he or she supervised; in the diving operations record for the operation and must print his or her name below the signature.

Guidance

2.10.1.7 If the diving operations involve more than one supervisor (e.g. if the diving operation spans more than one shift, or the diving supervisor is relieved for any reason during the course of the operation by another diving supervisor), then each supervisor must certify the details pertaining to the part of the operation that he or she supervised.

2.10.1.8 The relevant part of the record should be plainly ruled-off and the supervisor should countersign those details for which he or she had responsibility and print legibly his or her name below the signature.

Penalty: 10 penalty units

Guidance

2.10.1.9 10 penalty units, \$2,100 (see full guidance at paragraph 1.1.3).

(6) A diving contractor must keep a diving operations record for at least seven years after the last entry in it

Guidance

2.10.1.10 Every record of a diving operation conducted by a diving contractor must be kept in safe conditions for seven years after the last date in the record in case there is any necessity to subsequently refer to this information for medical or legal reasons.

Penalty: 5 penalty units

Guidance

2.10.1.11 5 penalty units \$1,050 (see full guidance at paragraph 1.1.3).

2.10.2 REGULATION 4.28: DIVERS' LOG BOOKS

- (1) A diver must:**
(a) have a log book in the form required by sub regulation (2)

Guidance

- 2.10.2.1 Every diver who dives in diving operations subject to these regulations must possess a diver's log book as described below.
- 2.10.2.2 It is the legal duty of every diver under these regulations to ensure that a detailed permanent record of every diving operation undertaken by the diver is kept in the form detailed in the regulations. Once this document contains information relevant to a diving operation it becomes a legal record and can be referred as evidence of what did or did not happen during a particular operation.
- 2.10.2.3 Diving supervisors must ensure that the record is a true and correct and comprehensive account of the operation in case there is any necessity to subsequently refer to this information for medical or legal reasons.

- (b) for each time he or she dives:**
(i) make an entry in the log book, in ink, as required by sub regulation (3)
(ii) sign the entry
(iii) have the diving supervisor for the operation countersign the entry
(c) keep the log book for at least seven years after the last entry in it.

Guidance

- 2.10.2.4 A diver must keep a record (written in ink) in his or her log book containing the details required in regulation 4.28(3) (below) for every dive undertaken by the diver. The diver must verify the accuracy of the details by signing the entry and have the accuracy of the entry certified by the diving supervisor who supervised the relevant dive.
- 2.10.2.5 It is not always practical for divers in saturation to have the diving supervisor sign the diver's log book immediately after each dive. However, every effort should be made to obtain the diving supervisor's signature in relevant log book entries before the diving supervisor leaves the job site.
- 2.10.2.6 It follows that in order for divers to discharge their responsibilities under this regulation, they must have the log books with them on site so that the relevant dive information can be recorded in a timely manner and enable the diving supervisor involved in the operation to verify the entry.
- 2.10.2.7 Each logbook must be kept by the diver for at least seven years after the last entry in case there is any need to subsequently refer to this information for medical and/or legal reasons.

Penalty: 5 penalty units

Guidance

- 2.10.2.8 5 penalty units \$1,050 (see full guidance at paragraph 1.1.3).

- (2) The log book must:**
- (a) have hard covers**
 - (b) be bound so that pages cannot easily be removed**
 - (c) have its pages serially numbered**
 - (d) show the diver's name**
 - (e) have a clear photograph of the head and shoulders of the diver**
 - (f) have a specimen of the diver's signature.**

Guidance

- 2.10.2.9 This regulation is intended to ensure that a detailed permanent record is kept of every diving operation undertaken by a diver. A diving logbook must be kept in a hard bound (i.e. pages are not loose leaf) record book with the pages numbered serially. It must clearly identify the person to whom the diving details in the record refer and must have a clear photograph showing a good likeness of the diver whose name is printed in the book and whose signature is displayed in the personal information.
- 2.10.2.10 A diver's log book is a legal record of the details of every dive undertaken by the diver. The diver must have it available at all times during a diving operation for production to an inspector under appointed under the Act whenever required. The inspector must be able to ascertain from the details in the record that the diver is the person to whom the details in the logbook refer.

- (2) An entry in the log book must contain the following information:**
- (a) the date to which the entry relates**
 - (b) the location of the diving operation (and, if the dive was from a ship or installation, the name of the ship or installation)**
 - (c) the maximum depth reached**
 - (d) the times at which the diver left the surface, reached the bottom, left the bottom and arrived at the surface again, and bottom time**
 - (e) the breathing apparatus and breathing mixture used**
 - (f) the decompression schedule followed**
 - (g) the work done and the plant and tools used**
 - (h) any decompression illness, barotrauma, discomfort or injury and details of any treatment given**
 - (i) details of any emergency or incident**
 - (j) anything else relevant to the diver's health or safety.**

Guidance

- 2.10.2.11 The diver must keep a record accurately containing all of the above information for each dive undertaken.

(4) Strict liability applies to sub regulation (1)

Guidance

- 2.10.2.12 See section 2.3.1.10 for guidance on the meaning of strict liability.

3. DIVING SAFETY MANAGEMENT SYSTEM

3.1 INTRODUCTION

3.1.1 AIM

3.1.1.1 To provide guidance in the preparation of a diving contractors DSMS.

3.1.2 SCOPE

3.1.2.1 The description of the DSMS should demonstrate that risk associated with the diving project is managed for continuous improvement throughout the duration of the project. This process is

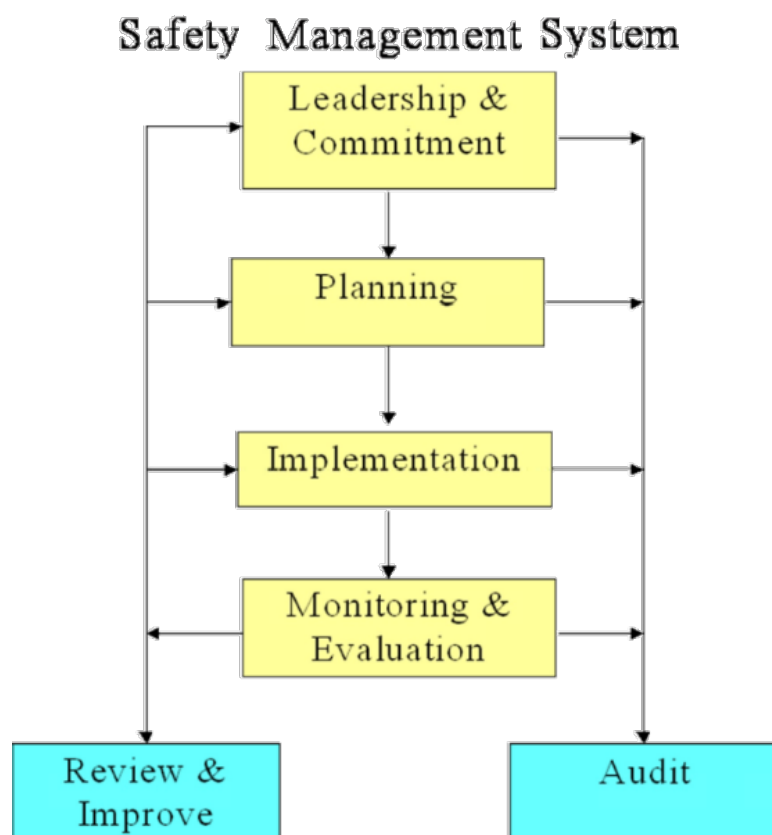


Figure 2: DSMS process

3.1.3 STRUCTURE OF GUIDELINES

3.1.3.1 Key elements of the DSMS are identified and an aim is specified for each.

3.1.3.2 Sub-elements are grouped broadly under the key elements.

3.1.3.3 Evidence of implementation of key elements and sub-elements is demonstrated by responding to prompt questions under the sub-elements.

3.1.3.4 Several of the sub-elements detail compliance standards which provide a test of implementation.

3.1.3.5 Additional information is provided in guidance notes referenced in superscript (for example¹).

3.1.4 VERIFICATION

3.1.4.1 Details provided in the DSMS will be verified by NOPSEMA during site verification audits.

3.1.5 OUTLINE OF CONTENTS

3.1.5.1 The DSMS outline is covered in the following sections;

Section 3 Reference	DSMS Key	Key element
3.2	1.0	Leadership and commitment
3.2.2	1.1	Policy and leadership
3.2.3	1.2	Organisation and responsibilities
3.2.4	1.3	Employee involvement and communication
3.2.5	1.4	Resources
3.3	2.0	Planning
3.3.2	2.1	Hazard identification and risk management
3.3.3	2.2	Objectives, plans and performance standards
3.3.4	2.3	Sources of information
3.3.5	2.4	Management system documentation
3.4	3.0	Implementation
3.4.2	3.1	Design, construction and commissioning
3.4.3	3.2	Management of change
3.4.4	3.3	Purchasing and control of materials and services
3.4.5	3.4	Safe operational procedures
3.4.6	3.5	Materials handling and storage
3.4.7	3.6	Maintenance and repair
3.4.8	3.7	Employee selection, competency and training
3.4.9	3.8	Workplace environment
3.4.10	3.9	Emergency response
3.5	4.0	Monitoring and evaluation
3.5.2	4.1	Inspection, testing and monitoring
3.5.3	4.2	Health monitoring systems
3.5.4	4.3	Incident/hazard investigation and reporting
3.5.5	4.4	Health and safety information and reports
3.6	5.0	Audit and review
3.6.2	5.1	DSMS audit

Section 3 Reference	DSMS Key	Key element
3.6.3	5.2	Review and improvement

3.2 KEYELEMENT 1.0 LEADERSHIP AND COMMITMENT

3.2.1 AIM

- 3.2.1.1 The diving contractor should demonstrate commitment to achieving a high standard of health and safety in the organisation through the development of effective health and safety policies supported by appropriate organisational structures, positive behaviour of individual managers and the promotion of a cooperative effort at each level in the organisation.

3.2.2 SUB-ELEMENT 1.1: POLICY AND LEADERSHIP

Standard

- 3.2.2.1 The diving contractor's health and safety policy should be supported by a high level commitment to effective risk and safety management consistent with and at least equal to other business aims.

Policy

- 3.2.2.2 The diving contractor should demonstrate:
- there is a documented health and safety policy¹ authorised by the accountable chief executive that clearly states the strategic health and safety objectives and a commitment to improving health and safety performance. The policy should:
 - reflect a commitment to safety at least equal to other business aims
 - establish a commitment to reduce health and safety risk to as low as is reasonably practicable
 - establish compliance with relevant legislation as a minimum requirement
 - include a commitment to develop and maintain appropriate systems and arrangements for the management of safety
 - include a commitment to continual improvement
 - policy intent is communicated to employees and interested parties²
 - arrangements are in place for the periodic review of the policy to ensure its relevance and appropriateness to the organisation's activities.

Leadership

- 3.2.2.3 The diving contractor should demonstrate:
- appropriate senior managers take direct responsibility for coordinating the implementation and maintenance of the health and safety policy

¹ **Guidance Note 1:** In addition to a general health and safety policy the diving contractor may have a number of specific policies. For instance corporate or diving project specific policies, employment policies, training policies, health policies, rehabilitation policies, etc.

² **Guidance Note 2:** Interested parties likely to be associated with the organisation include trades-people, support staff, contractors, visitors including management, clients and guests.

- b) there are mechanisms by which senior managers are held accountable for achievement of the health and safety outcomes established in the policy
- c) there are mechanisms that promote the active involvement of all employees in achieving policy objectives.

3.2.3 SUB-ELEMENT 1.2: ORGANISATION AND RESPONSIBILITY

Standard

- 3.2.3.1 The diving contractor should develop an effective organisational structure (roles and responsibilities) for implementation and maintenance of the health and safety policy.

Responsibilities

- 3.2.3.2 The diving contractor should demonstrate:

- a) there is an appropriate structure for the management of safety
- b) specific responsibilities are allocated for the management of safety critical activities
- c) broad safety responsibilities consistent with authority levels are defined for each level in the organisation and for specified support personnel³
- d) employees are informed of their health and safety related roles, responsibilities, accountabilities and authorities
- e) employee understanding of, and adherence to, roles, responsibilities, accountabilities and authorities are verified
- f) roles, responsibilities and accountabilities are regularly reviewed and maintained.

Staffing

- 3.2.3.3 The diving contractor should demonstrate:

- a) sufficient personnel with appropriate skills are available to safely operate the diving project during normal and emergency situations
- b) hours of work and shift patterns reflect health and safety considerations.

Supervision

- 3.2.3.4 The diving contractor should demonstrate:

- a) levels of supervision at a diving project are commensurate with the level of risk associated with the tasks being performed; and
- b) personnel and third parties entering and leaving the site are controlled.

³ **Guidance Note 3:** General responsibilities should be consistent with the general duty of care requirements and reflect the diving contractor's health and safety policy. Responsibilities should also reflect accountabilities of line management in the implementation and maintenance of the management systems and the control of hazards and risk. Typical examples of supporting documentation that may be cited in the DSMS include:

- Company organisation chart showing the reporting relationships between the corporate/company organisation and operations.
- Documented roles and responsibilities for each organisational unit/level having safety management support responsibility.
- Reporting roles and responsibilities between diving contractor and sub-contractor organisations.
- Documented safety roles and responsibilities allocated to specific positions or individuals.
 - health and safety and or committee representatives are trained and competent to perform their duties in accordance with occupational health and safety legislative requirements
 - sufficient resources are provided to employee safety representatives or committee members involved in safety related functions.

3.2.4 SUB-ELEMENT 1.3: EMPLOYEE INVOLVEMENT AND COMMUNICATION**Standard**

- 3.2.4.1 The diving contractor should develop and maintain effective participation and consultative mechanisms that promote active communication and involvement of all personnel in the management of safety, the control of workplace hazards and risk and the development of the safety case.

Objects and targets

- 3.2.4.2 The diving contractor should demonstrate:
- a) formal health and safety consultative mechanisms are in place within the organisation and at the diving project site
 - b) safety representatives and or safety committees are elected or established in accordance with the relevant health and safety legislation applying to the operation⁴

Participation

- 3.2.4.3 The diving contractor should demonstrate:
- a) mechanisms exist for involving personnel in:
 - (i) the development and implementation of health and safety policies and procedures
 - (ii) the identification and management of hazards and risk
 - (iii) the preparation of the DSMS and the diving project plan
 - b) clearly defined issue resolution processes are in place and these are known by all concerned parties.

Communication

- 3.2.4.4 The diving contractor should demonstrate:
- a) formal and informal methods of communication are used to inform employees of health and safety issues
 - b) formal methods of communication are used to advise personnel of their health and safety related roles, responsibilities, accountabilities and authorities.

3.2.5 SUB-ELEMENT 1.4: RESOURCES**Standard**

- 3.2.5.1 The diving contractor should ensure sufficient resources to develop, implement and maintain the DSMS.

Objects and targets

- 3.2.5.2 The diving contractor should demonstrate sufficient resources (financial, human, including specialist advisers) are available to implement the health and safety policy and maintain and improve the DSMS⁵.

⁴ **Guidance Note 4:** Further guidance is provided in section 2 under regulation 4.18

⁵ **Guidance Note 5:** The diving contractor should allocate sufficient resources (e.g., financial, human and time) to develop, implement and maintain the DSMS. Where necessary, specialist advisers (either in-house or external) should be sourced to assist with development, implementation or maintenance of the system. Specific health and safety related programs and issues requiring allocation of resources may

3.3 KEY ELEMENT 2.0 PLANNING

3.3.1 AIM

- 3.3.1.1 The diving contractor should demonstrate a systematic approach to the management of diving project hazards and risk through the identification and assessment of hazards and risk, the establishment of objectives, plans and performance standards, and the development of adequate documentation.

3.3.2 SUB-ELEMENT 2.1: HAZARD IDENTIFICATION AND RISK MANAGEMENT

Standard

- 3.3.2.1 The diving contractor should have procedures in place for the systematic review of health and safety hazards and risk over the duration of the diving project.

Objects and targets

- 3.3.2.2 The diving contractor should demonstrate policies, standards and procedures are in place for the systematic identification, assessment and control of hazards and risk associated with the design, development, operation and abandonment of the diving project. The demonstration should establish the:
- company's risk acceptance criteria and basis for selection⁶
 - scope, methods and timings for identification of hazards and assessment of risk to health and safety associated with the diving system and technology, working environment and work activities at each stage of the diving project
 - hierarchy of risk reduction measures used for the control of risk⁷
 - methods used to ensure that risk levels are systematically reduced to ALARP
 - methods of ensuring appropriate and competent personnel (including diving project employees, where appropriate) are involved in the identification of hazards and selection of risk reduction measures
 - methods used to document, review and keep current information obtained during the formal hazard identification and assessment process and the selected control measures.
 - methods for ensuring risk reduction measures are implemented and maintained for ongoing

originate from:

- different phases of operation;
- incident/hazard reports;
- various initiatives such as safety campaigns;
- training programs;
- emergency response;
- safety audits;
- changes to regulations, etc.

⁶ **Guidance Note 6:** Risk acceptance criteria may include:

- qualitative and/or quantitative organisational objectives;
- regulatory requirements;
- current and relevant codes of practice and industry standards.

⁷ **Guidance Note 7:** The following hierarchy of risk reduction measures should be used in the order of preference as listed:

- elimination;
- substitution;
- engineering,
- procedures, training or PPE relating to control, mitigation, recovery.

control

- h) method used to review the overall effectiveness of the risk management system⁸
- i) measures of risk reduction used.

Communication

3.3.2.3 The diving contractor should demonstrate arrangements for:

- a) informing employees of the risk management system and their role in identifying and controlling hazards and risk at the diving project
- b) communicating to employees of day to day changes in the existing and newly identified hazards on the diving project
- c) communicating to employees of day to day changes in the status of control measures at a diving project.

Specific requirements

3.3.2.4 The diving contractor should specifically demonstrate:

- a) initiating events and possible escalation factors are considered in the risk assessment for identified hazards
- b) physical and human factor hazards and risk associated with safety critical tasks (including maintenance tasks) are identified and assessed
- c) how results are used in establishing organisational and diving project objectives.

3.3.3 SUB-ELEMENT 2.2: OBJECTIVES, PLANS AND PERFORMANCE STANDARDS

Standard

3.3.3.1 The diving contractor should establish, maintain and monitor measurable and achievable health and safety objectives, plans and performance standards consistent with the company's health and safety policy.

Objectives and targets

3.3.3.2 The diving contractor should demonstrate:

- a) measurable and achievable health and safety objectives are routinely developed, documented and implemented for relevant function and levels within the organisation and for the facilities
- b) achievements against objectives are routinely reviewed.

Health and safety management plans and performance standards

3.3.3.3 The diving contractor should demonstrate:

- a) plans and performance standards are routinely established for attaining objectives and targets⁹

⁸ **Guidance Note 8:** Events that may prompt a review of hazards information include:

- a planned major change by the operator or the diving contractor;
- a major incident (for the operator, diving contractor or in the industry generally);
- industry experience;
- a scheduled hazard review.

⁹ **Guidance Note 9:** There should be a balance of:

- b) plan implementation is monitored and performance against standards is appraised
- c) management is held accountable for meeting health and safety performance standards
- d) plans are updated to reflect changes in performance standards, or outcomes of appraisals of the systems effectiveness.

Communication

- 3.3.3.4 The diving contractor should demonstrate safety objectives, plans and performance standards and the subsequent level of achievement are communicated to all employees and interested parties.

3.3.4 SUB-ELEMENT 2.3: SOURCES OF INFORMATION (LEGISLATIVE AND OTHER STANDARDS)

Standard

- 3.3.4.1 The diving contractor should develop, implement and maintain procedures for the identification, collection, review and dissemination of information and standards relevant to the safe design and operation of the diving project.

Objectives and targets

- 3.3.4.2 The diving contractor should demonstrate procedures and arrangements are in place for the routine identification, collection, update and effective communication of information relevant to health and safety. Information should include but is not limited to:
- a) legislation and associated amendments
 - b) relevant industry standards (AS, AS/NZS etc.)
 - c) relevant equipment/product information
 - d) safety bulletins issued by Regulators and industry bodies (HSE, IMCA, NOPSEMA)
 - e) relevant codes of practice (IMO, IMCA, IOGP)
 - f) incident and hazard data
 - g) safety alerts.

3.3.5 SUB-ELEMENT 2.4: MANAGEMENT SYSTEM DOCUMENTATION

Standard

- 3.3.5.1 The diving contractor should develop and maintain an accessible documented DSMS integrated with other management systems.

Objectives and targets

- 3.3.5.2 The diving contractor should demonstrate manuals, procedures, plans, and drawings exist in either hard copy or electronic form for the management of health and safety and control of risk at a diving project. The demonstration should detail:
- a) the structure of manuals and documents used to manage safety at the diving project
 - b) arrangements for ensuring documents are current and readily accessible to employees

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- leading indicators, for example percentage close-out of audit actions, training schedule completion, etc.
 - lagging indicators, for example lost time injury frequency, total recordable case frequency, etc.
-

-
- c) how the documentation applies in the implementation and use of the DSMS.

3.4 KEY ELEMENT 3.0 IMPLEMENTATION

3.4.1 AIM

- 3.4.1.1 The diving contractor should demonstrate that hazards associated with facilities and work activities are controlled and arrangements are in place for responding to emergencies.

3.4.2 SUB-ELEMENT 3.1: DESIGN, CONSTRUCTION AND COMMISSIONING

Standard

- 3.4.2.1 The diving contractor should demonstrate that hazards and risk associated with the development, construction and commissioning of the diving project and its plant, equipment and systems are eliminated, or reduced to as low as reasonably practicable.

Design planning

- 3.4.2.2 The diving contractor should demonstrate:
- a) the incorporation of results from risk assessment studies as an interactive element of the design process (for both process and workplace hazards)
 - b) responsibility for design of facilities, work systems and activities is clearly defined
 - c) personnel involved in design are competent
 - d) methods of co-ordination exist that ensure design information is communicated between project and operational groups
 - e) hazards are identified and risk is assessed, eliminated or controlled at each stage of the design
 - f) design changes are reviewed as part of the overall risk management process.

Design input

- 3.4.2.3 The diving contractor should demonstrate:
- a) design specifications for all major project work refer to appropriate technical standards, safe design criteria, safety performance standards, regulatory requirements, good oil-field practice and the diving contractor's safety objectives
 - b) task and diving project design specifications reflect human factor considerations¹⁰.

¹⁰ **Guidance Note 10:** Human Factor issues:

- Task design:
 - the design of the task
 - the capacity for - overwork, under work, boredom
 - the effects of scheduling of work - stress, control of fatigue
 - ergonomic requirements
 - decision making requirements
 - communication requirements
 - availability of work standards
 - information requirements
 - instructions – training requirements
 - warning sign requirements
 - Personal factors:
 - skill levels
-

Design output

3.4.2.4 The diving contractor should demonstrate:

- a) documented drawings, reports, calculations and analyses meet the design specification brief
- b) ergonomics are considered in design¹¹
- c) hazards and risk associated with construction, commissioning and operation are identified and assessed
- d) operations and maintenance procedures and purchasing specifications include safety performance standards (for further guidance see NOPSEMA's guideline on control measures and performance standards N04300-GN0271).

Design review

3.4.2.5 The diving contractor should demonstrate:

- a) formal design reviews are conducted at each stage of the design for major equipment to be used in the diving project
- b) personnel from relevant functional groups are involved in the review
- c) modifications to the design are initiated and controlled.

Design validation

3.4.2.6 The diving contractor should demonstrate:

- a) safety critical hardware and systems design aspects are validated by independent and competent persons or bodies
- b) validation of the design against the design specification and safety performance standards occurs at key design phases and at commissioning.

-
- physical attributes of personnel operating plant or conducting tasks
 - experience of employees
 - employee knowledge
 - fitness for work
 - Tools, materials and technology:
 - design, control systems
 - access and design of tools
 - integrity and suitability of materials.

¹¹ **Guidance Note 11:** Ergonomic considerations associated with design can include:

- Lay-out of and use of controls and displays
 - control should reflect the equipment functions
 - control should be accessible, easy to distinguish and arranged to promote ease of use
 - displays and controls should be arranged to encourage good working postures and allow movement and variation
 - control systems should be designed to accommodate operator intervention in computer controlled processes
 - displays should provide essential information about fault and emergency states and indicates priority where possible
 - displays should be visible and easily intelligible from all relevant working positions.
 - General plant design
 - automatic safety devices should be provided where a rapid response and/or where complex information handling is required
 - automatic devices or help from other personnel should be available for periods of overload on individuals
 - plant, equipment and facilities should be designed to allow access and egress for normal maintenance operations and during emergencies
 - lifting equipment should be provided where necessary and ease of use/access should be reviewed.
-

Construction

- 3.4.2.7 The diving contractor should demonstrate:
- construction hazards and risks are identified and plans and procedures are established to control them
 - verification of the final construction against the design specification takes place.

3.4.3 SUB-ELEMENT 3.2: MANAGEMENT OF CHANGE**Standard**

- 3.4.3.1 The diving contractor should demonstrate a management of change process that ensures changes and modifications are reviewed for hazards and risk prior to implementation and information on change requirements are communicated to all relevant employees and stakeholders.

Engineering

- 3.4.3.2 The diving contractor should demonstrate arrangements in place for controlling modifications to plant, equipment and materials used at a diving project¹². The demonstration should detail how:
- change requests are initiated, processed and authorised
 - change requests are prioritised and safety and risk implications are assessed
 - the cumulative impact of minor changes is assessed and actioned
 - those affected by change are consulted prior to implementation
 - changes are communicated to interested parties.

Organisation and work systems

- 3.4.3.3 The diving contractor should demonstrate arrangements are in place for controlling permanent and temporary organisational and work activity modifications and changes and this is communicated to relevant employees¹³. The demonstration should indicate how:
- change requests are initiated, processed and authorised
 - change requests are prioritised and safety and risk implications are assessed
 - the cumulative impact of minor changes is assessed and actioned

¹² **Guidance Note 12:** A management of change system will ensure that changes will be analysed, evaluated and communicated to employees prior to implementation. Changes should be supported by document control systems. Features of such a system normally include for engineering and process changes:

- evaluation of hazards, resources needed and the effect on operational conditions, construction, decommissioning requirements, maintenance requirements
- assessment of risk levels
- review of change requirements in other systems (for example changes in inspection and test frequencies);
- communication of intended changes to affected groups
- training requirements.

¹³ **Guidance Note 13:** Health and safety implications should be assessed when there are organisational or work activity changes for example:

- change of company ownership
 - change of organisational structures and reporting relationships
 - changes in staffing numbers (or staffing philosophy, down-sizing, upsizing or outsourcing)
 - job or task redesign
 - changes in duty allocations
-

- d) those affected by change are consulted prior to implementation.

Documents

3.4.3.4 The diving contractor should demonstrate:

- a) procedures are established, implemented and maintained for the control of all relevant safety and risk management documents, plans, drawings and data. The demonstration should indicate:
- (i) how current versions of documents and data are authorised, distributed and made available to appropriate personnel. If electronic documents are used, detail measures established to make these documents available during power outages
 - (ii) responsibility for how documents are periodically reviewed and updated when changes occur
 - (iii) arrangements in place for the withdrawal of obsolete documents and arrangements that ensure superseded documents and data are not unintentionally used
- b) documents and data are maintained and are in a format suited to the requirements of users.

3.4.4 SUB-ELEMENT 3.3: PURCHASING AND CONTROL OF MATERIALS AND SERVICES

Standard

3.4.4.1 The diving contractor should develop and maintain appropriate arrangements for the control of purchased services and materials to ensure additional hazards are minimised.

Services

3.4.4.2 The diving contractor should demonstrate:

- a) tender specifications are established that incorporate health and safety requirements for all major contracts¹⁴
- b) procedures for the selection of contractors incorporate a review of safety requirements in accordance with the tender specification
- c) arrangements are in place for the review and integration of the diving contractor and contractor safety management systems prior to commencement of activities. The demonstration should detail:
- (i) mechanisms to involve contractors in hazard identification and risk assessment
 - (ii) arrangements for communicating safety related issues between the diving contractor and contractors
 - (iii) how responsibilities for emergency response are assessed and allocated between contractors and the diving contractor and revised organisation descriptions and roles

¹⁴ **Guidance Note 14:** Contractor selection criteria should consider the capacity of the tenderers to comply with the tender specifications, legislative compliance, health safety and environment (HSE) performance. The contractors HSE management system could include:

- objectives
- plans
- records
- training
- competence
- incident reporting etc.

and responsibilities are determined and communicated

- (iv) arrangements in place for assuring contractor competence¹⁵
- d) procedures and arrangements for monitoring the performance of contractors during and on completion of the contract or assigned work. The demonstration should establish the arrangements for:
 - (i) supervision, monitoring and auditing of the contractor's performance during operation
 - (ii) verifying and accepting the work undertaken against the tender specification on completion of the contract.

Materials and equipment

3.4.4.3 The diving contractor should demonstrate:

- a) purchase specifications and/or purchase orders incorporate health and safety requirements¹⁶
- b) employees are consulted prior to the purchase of materials and equipment with potential health and safety implications
- c) procedures are in place for the inspection and verification of materials supplied against the purchase specification
- d) arrangements are in place for the review of operating procedures and practices when purchases have health and safety risk implications¹⁷
- e) personnel are informed of health and safety implications associated with purchases
- f) personnel are aware of their responsibilities with respect to hazard identification and risk
- g) management during the process of materials and equipment specification and purchasing.

3.4.5 SUB-ELEMENT 3.4: SAFE OPERATIONAL PROCEDURES

Standard

3.4.5.1 The diving contractor should develop and use operational procedures that effectively manage risk arising from operations.

Procedures

3.4.5.2 The diving contractor should demonstrate:

- a) That safe operating procedures are in place for all key work activities and tasks¹⁸. The

¹⁵ **Guidance Note 15:** Contractors should be verified as competent in all activities critical to managing the risk associated with their assigned tasks. As a minimum, induction training should be provided in emergency response and permits to work.

¹⁶ **Guidance Note 16:** Purchase specifications should include compliance with relevant technical, design, operational and legislative standards: For example Australian and international standards

Purchase specifications should also require the provision of information and data associated with the safe operation, handling and use. For example:

- Material safety data sheets (MSDS)
- Operational and maintenance procedures and manuals.

¹⁷ **Guidance Note 17:** All purchased items, equipment and material should be assessed to determine the need for changes in operating, maintenance and safety management practices and procedures, for example, training, provision of additional risk control measures, communication etc.

¹⁸ **Guidance Note 18:** Safe operational procedures and manuals should be developed to control or prevent risks occurring during all

demonstration should detail:

- (i) safety critical procedures established as a result of risk assessment studies
- (ii) procedures and arrangements for the inspection, maintenance and certification of plant and equipment.

- b) that arrangements are in place for obtaining feedback on and reviewing the adequacy of operational procedures. The demonstration should indicate employees responsible for task execution are involved in this review.

3.4.5.3 The diving contractor should demonstrate that safe operational procedures are in place for both routine and non-routine work activities. The demonstration should establish that safe operational procedures are:

- a) appropriate, established, implemented and maintained
- b) understood, current and assessable

3.4.5.4 Safe operational procedures should include, but not be limited to:

Permit to work

3.4.5.5 Setting out procedures for¹⁹:

- a) authorisation and issuing of permits
- b) distribution and display of permits
- c) isolation procedures
- d) hazard identification and risk management

phases of a diving project.

Procedures referred to in this section relate to work activities including those that adequately control hazards during normal operations (including routine and non-routine operations and maintenance) and planned change (including those that arise from construction, and changes to structures, plant, substances, other procedures, personnel, or information). Other sections of this guideline deal with additional procedures for controlling emergencies and unplanned changes.

Key work activities and tasks may include the type of diving (e.g. saturation, nitrox, air, etc.) and the type of work to be conducted (construction, maintenance, inspection, etc.). If work activities or tasks have not been allowed for in the DSMS then those activities or tasks may not take place under that DSMS.

Operational procedures should deal with risks identified during the risk assessment and comply with regulatory requirements. The procedures should also be consistent with the contractor's control philosophy.

¹⁹ **Guidance Note 19:** The diving contractor's summary of any work permit system and isolation procedures should contain references to the following:

- types of work permits in use
 - type of work for which a permit is required
 - methods of hazard recognition and control
 - personal safety of those carrying out the work
 - safety of other employees
 - overall safety and integrity of the vessel etc.
 - locking, tagging and isolation procedures
 - limits on number of active permits
 - responsibility for issue and cancellation of permits
 - shift handover procedures relating to permits
 - intermediate inspections
 - procedures for suspension or cancellation of work
 - concurrent operations
 - period of permit validity, duration of work
 - close-out and sign off of permits.
-

- e) simultaneous operations
- f) change in operating status
- g) close-out of permits etc.

Simultaneous and non-routine activities

3.4.5.6 Setting out procedures for:

- a) the control of safety critical, simultaneous and non-routine activities
- b) restrictions on activities when all or parts of key safety systems are unavailable.

Maintenance operations

3.4.5.7 Setting out procedures for:

- a) operation of plant and equipment, auxiliary equipment and utilities
- b) planned maintenance activities
- c) breakdown and emergency maintenance activities etc.

Safe diving operations

3.4.5.8 Setting out procedures for:

- a) saturation diving
- b) Air/nitrox diving
- c) hard suit diving

Safe work

3.4.5.9 Setting out procedures for:

- a) working at heights
- b) working over the side
- c) confined space entry
- d) pressure testing, etc.

3.4.6 SUB-ELEMENT 3.5: MATERIALS HANDLING AND STORAGE

Standard

3.4.6.1 The diving contractor should have in place a safe system for handling and storing of materials.

Material handling

3.4.6.2 The diving contractor should demonstrate that procedures are in place to ensure

- a) safe movement of materials and personnel²⁰

²⁰ **Guidance Note 20:** Procedures for movement of materials and personnel should include, where applicable:

- supply vessels
- helicopter operations
- lifting operations
- manual handling
- communications
- certification and control for lifting gear
- personnel baskets;

- b) manual handling activities are carried out safely²¹
- c) activities involving cranes, hoists, winches and other lifting appliances are carried out safely²²
- d) lifting gear such as slings and shackles are used in a safe manner²³
- e) lifting equipment such as containers, pallets, racks and work baskets are used in a safe manner
- f) risks associated with the handling of hazardous materials are controlled²⁴.

Material storage

3.4.6.3 The diving contractor should demonstrate that procedures are in place to ensure:

- a) storage areas for materials are located in appropriate areas, and are fit for purpose
- b) hazardous materials are properly stored given due regards to the nature of the hazards and need for segregation²⁵.

3.4.7 SUB-ELEMENT 3.6: MAINTENANCE

Standard

3.4.7.1 The diving contractor should have an effective system of maintenance to ensure the safe operation of the diving project

-
- vessel transfer limitations;
 - isolation/depressurisation of pressurised lines if lifting over them.

References should be made to any dropped object and impact studies and associated procedural and hardware controls.

²¹ **Guidance Note 21:** Procedures should be in place to minimise the risk of manual handling injuries, particularly back injuries. Means to reduce the risk should include:

- the use of mechanical lifting aids, such as cranes, winches, hoists, fork lifts, and wheeled trolleys
- training in safe lifting and carrying techniques.

²² **Guidance Note 22:** Procedures should be in place for the safe operation of lifting devices. These should include:

- ensuring lifting appliances meet appropriate standards and codes
- installation requirements for items such as padeyes and monorails
- inspection, testing and maintenance requirements for lifting devices deployed subsea
- operator training.

²³ **Guidance Note 23:** Procedures should be in place for the appropriate supply and usage of lifting gear. These should include:

- certification and marking requirements
- inspection, maintenance and testing requirements
- lifting gear register
- training and qualifications of persons who inspect and use lifting gear.

²⁴ **Guidance Note 24:** Procedures should be developed, authorised, implemented and maintained for the labelling, handling, storage and disposal of hazardous materials. These procedures should reference any standards, registers or manifests required by relevant legislation or international standards or codes. Prior to shipping offshore, health and safety information on the relevant material should be obtained by the diving contractor, for example:

- MSDSs and signage for all chemicals and other materials onsite
- storage, labelling and handling requirements for any hazardous or toxic substance
- disposal of any materials, for example oils, hydraulic fluids, or other petrochemical products that may impact upon the environment on or off site
- the methods used to inform employees of storage, handling and disposal methods.

²⁵ **Guidance Note 25:** Procedures should be in place for the safe handling, storage and disposal of any materials requiring special precautions as defined by MSDSs. In addition, segregation of materials during transport, storage or usage may be required, for example:

- storage of flammable materials in specially designated areas away from sources of heat or ignition
 - segregation of oxidising materials from flammable materials
 - segregation of poisons from foodstuffs.
-

Maintenance planning

3.4.7.2 The diving contractor should demonstrate standards and procedures are in place for maintaining plant, equipment and facilities. The demonstration should:

- a) indicate how safety critical items are determined
- b) detail what maintenance procedures are applicable and validated
- c) establish the diving contractor's maintenance philosophy
- d) detail responsibilities for authorising, conducting and supervising maintenance activities
- e) indicate how routine maintenance frequencies are determined²⁶
- f) indicate how maintenance items are prioritised
- g) indicate how maintenance of safety critical equipment is scheduled and controlled.

Maintenance implementation

3.4.7.3 The diving contractor should demonstrate:

- a) inspections, maintenance, repair and plant alteration records are established and maintained
- b) procedures are in place for the review of hazards and risk associated with maintenance activities and tasks prior to undertaking these activities
- c) plant and equipment requiring registration with external authorities is identified and procedures ensure that registration is maintained
- d) procedures are in place for the periodic review of action against maintenance schedules to verify critical plant maintenance is being undertaken and equipment is safe before being returned to service
- e) procedures are established for the reporting, isolation and withdrawal of unsafe plant and equipment from service
- f) procedures are in place for the periodic review and improvement of maintenance procedures

3.4.7.4 The diving contractor should detail how maintenance and engineering personnel are involved in the review of procedures and planning schedules.

3.4.8 SUB-ELEMENT 3.7: EMPLOYEE SELECTION, COMPETENCY AND TRAINING**Standard**

3.4.8.1 The diving contractor should ensure ongoing competence of personnel.

Employee selection

3.4.8.2 The diving contractor should demonstrate:

- a) procedures exist for the specification, selection and placement of competent personnel²⁷

²⁶ **Guidance Note 26:** Maintenance schedules should:

- be consistent with relevant codes and standards and manufacturer's recommendations
- reference the asset or tag number of each item
- reference the database or register where test and inspection certificates are contained

²⁷ **Guidance Note 27:** Typically, job specifications may be detailed in position descriptions, job descriptions and employee contracts. Position descriptions or job specifications should identify minimum skills, qualifications and experience requirements including health,

detailing how competence and personal attributes relating to safety are identified and used in the selection of personnel:

- (i) establishing the method for reviewing job and position specifications
- (ii) indicating how minimum skills, experience and qualifications of prospective employees are assessed and verified

b) the mechanism for communicating roles and responsibilities to employees.

Competency and training

3.4.8.3 The diving contractor should demonstrate:

- a) adequate resources are allocated to training
- b) health and safety training needs are periodically assessed in conjunction with employees
- c) training and development specific to health and safety occurs²⁸
- d) training in relevant work and safety critical procedures is provided to new, transferring and existing employees
- e) visitors, casual and new employees are inducted
- f) competence of employees is assessed on appointment and periodically reviewed
- g) training courses, programs, and modules are assessed, maintained and current
- h) training records are maintained and reviewed (to capture refresher training requirements)
- i) training programs effectiveness are reviewed (including verification of employees' competence) and modified or updated where necessary.

3.4.9 SUB-ELEMENT 3.8: WORKPLACE ENVIRONMENT

Standard

3.4.9.1 The diving contractor should demonstrate facilities and processes are in place to ensure and promote a safe work environment.

physical and psychological capacities for the tasks to be undertaken.

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Guidance Note 28: Training programs should be established for each level in the organisation. Training could include:

- Safety management system
 - legal requirements
 - human factors
 - hazard identification and control.
- Job Training
 - operational procedures
 - emergency response
 - health and safety responsibilities
 - training in areas specified in legislation
 - training in the use of PPE, hazardous substances handling etc.
- Induction training
 - emergency response
 - health and safety responsibilities
 - incident / hazard reporting
 - permit to work
 - hazard identification and control
 - project specific training as required.

Environment

3.4.9.2 The diving contractor should address (as a minimum):

- a) chamber atmospheric contamination
- b) housekeeping
- c) hazardous marine life
- d) living chamber noise level monitoring ²⁹
- e) sign posting
- f) personal protective equipment³⁰
- g) temperature control ³¹
- h) hygiene³²
- i) radiation
- j) working hours
- k) basic amenities³³.

3.4.10 SUB-ELEMENT 3.9: FIRST AID AND EMERGENCY RESPONSE**Standard**

3.4.10.1 The diving contractor should implement effective first aid and emergency response arrangements.

First aid

3.4.10.2 The diving contractor should demonstrate:

- a) first aid requirements and facilities are identified and assessed. The demonstration should:
 - (i) identify the types of incidents that may occur on or in the area of the diving project
 - (ii) indicate the inventories of first aid equipment and facilities
 - (iii) detail the need for numbers, classifications and competence of trained first aid and

²⁹ **Guidance Note 29:** Noise level monitoring:

- procedures should be in place for the identification, assessment and control of noise risks associated with the design, selection and operation of diving plant and equipment
- noise levels should be reassessed when changes occur
- design and purchase specifications establish noise levels consistent with legislative requirements.

³⁰ **Guidance Note 30:** Personal protective equipment (PPE) needs should be assessed and procedures in place for the selection, issue, training, and use of the PPE.

³¹ **Guidance Note 31:** Temperature control. Plant, equipment and procedures should be in place to ensure that:

- as far as is practicable, heating and cooling is provided to enable divers to work in a comfortable environment
- employees are protected from extremes of heat and cold.

³² **Guidance Note 32:** Hygiene. Procedures should be in place to maintain a hygienic environment for saturation diving living chambers and diving equipment.

³³ **Guidance Note 33:** Work place facilities. Facilities and amenities must conform to legislative requirements, standards and codes of practice for items such as:

- drinking water
- sufficient workspace
- surfaces and floors
- change rooms, toilets and showers
- cabins and other accommodation space.

-
- diver medically trained personnel
 - (iv) detail the types of training provided to personnel
 - (v) detail the management of first aid coverage at remote sites (if applicable)
 - (vi) detail the arrangements for 24-hour cover for first aid
 - b) procedures are established for maintenance of first aid facilities. The demonstration should indicate the:
 - (i) arrangements for ensuring the security of prescription medications
 - (ii) arrangements for maintaining the first aid inventory
 - (iii) availability of additional medical advice.

Emergency response

3.4.10.3 The diving contractor should demonstrate:

- a) all potential emergencies are identified and procedures and facilities exist for mitigating their effects³⁴. The demonstration should indicate:
 - (i) the offshore command structure to manage the emergency response on the diving project
 - (ii) the onshore command structure to co-ordinate and support the emergency response on the diving project
 - (iii) the roles and responsibilities of all key employees associated with the execution of the emergency response plan
 - (iv) how all parties, including external agencies, are consulted regarding the execution of emergency response actions for example onshore office, police, maritime agencies

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Guidance Note 34: The diving contractor should have plans and procedures in place for all identified emergency scenarios that could reasonably be expected to occur during each phase of the diving project. Identified scenarios should cover for example:

- dynamic Positioning (DP) vessel loss of position
- working adjacent live hydrocarbon facilities (hydrocarbon release)
- serious injury or death
- adverse weather
- subsea hydrocarbon releases, for example pipelines or flowlines
- diving emergencies, including (but not limited to) emergency decompressions and hyperbaric rescue and recovery
- events requiring evacuation of the facility
- toxic release.

The emergency response plan should reflect the combined diving contractor and operator procedures and be discussed and agreed with all relevant parties. Emergency response procedures should:

- have clear contents and directions for use
- contain up to date names and contact numbers for key personnel and organisations
- clearly show the chain of command and lines of communication to be put in place during an emergency
- define the responsibilities of essential personnel and outline the basic procedures for responding to emergencies
- ensure all relevant personnel and organisations are kept informed of the plan and
- any updates.

The plan should also contain or reference a program of emergency drills and exercises which:

- involves all relevant facility and support personnel as well as outside agencies
 - is closely aligned with emergency scenarios relevant to those identified
 - includes a review on completion of the exercises and allowance for updates if necessary.
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- and other emergency services
 - (v) how conflicting demands are managed where services and equipment of one contractor are shared by a number of diving contractors, for example emergency and rescue equipment
 - (vi) the procedures for issuing and maintenance of safety equipment, emergency equipment and specialised tools
 - (vii) the procedures in place for search, rescue and recovery operations
 - (viii) the availability of sufficient numbers of competent emergency trained response team personnel at all times
 - (ix) the procedures for accounting for all personnel on board in an emergency
 - b) a schedule of regular emergency drills and exercises are conducted for each emergency scenario
 - c) procedures are established to assist employees who are exposed to critical incidents at work
 - d) all personnel are competent to perform their roles during an emergency. The diving contractor should
 - (i) indicate how the emergency command ability of the person-in-command of the diving project is assessed prior to appointment
 - (ii) establish the training provided and the methods of assessing competence for all key personnel
 - e) procedures are established for communicating emergency response arrangements to employees
 - f) emergency communication procedures are established
 - g) emergency equipment is fit for purpose, available at appropriate locations and accessible. The demonstration should indicate contingencies in the event of damage/loss or unavailability of equipment, for example life boats
 - h) emergency equipment, exit signs and alarm systems are inspected, tested and maintained at regular intervals
 - i) the effectiveness of the emergency response system is periodically assessed, reviewed and improved.

3.5 KEY ELEMENT 4.0 MONITORING AND EVALUATION

3.5.1 AIM

- 3.5.1.1 The diving contractor should demonstrate that diving project plant, process, work system and management arrangements are measured, monitored and, evaluated and, where deficiencies are identified, corrective actions are implemented.

3.5.2 SUB-ELEMENT 4.1: INSPECTION, TESTING AND MONITORING

Standard

- 3.5.2.1 The diving contractor should have effective systems of inspection, testing and monitoring to
-

ensure technical integrity of diving related plant and equipment associated with the diving project.

Monitoring programs

3.5.2.2 The diving contractor should demonstrate:

- a) appropriate condition monitoring programs exist
- b) regular inspections of workplace and facilities are carried out
- c) informal hazard inspections take place
- d) inspection and tests of safety critical risk control and mitigation devices are regularly conducted³⁵. The demonstration should indicate how:
 - (i) inspection and test frequencies are determined
 - (ii) completion of test schedules is verified
- e) procedures exist for the safe execution of inspection and test activities. Inspection processes should seek input from personnel required to undertake the tasks being inspected
- f) inspection, test and monitoring equipment is maintained, stored and calibrated to an appropriate standard
- g) inspection reports contain recommendations for the prioritisation and implementation of corrective actions
- h) responsibility for implementing corrective actions arising from inspection reports is assigned to specified personnel
- i) arrangements exist for verifying that corrective actions have been completed
- j) corrective actions arising from inspections are evaluated to determine their effectiveness
- k) workplace environmental monitoring is conducted (where appropriate) and records of the results are maintained
- l) inspection and testing results are periodically reviewed and used in assessment of the work priorities of the diving project.

³⁵ **Guidance Note 35:** Inspection, testing and monitoring activities include:

- life support equipment
- emergency power
- lifting and rigging equipment
- communications equipment
- diving plant and equipment
- emergency response equipment
- pressurised equipment

The frequency of routine inspections should match:

- the assessment of the general risk
 - regulatory requirements
 - good oil field practice
 - manufacturer's recommendations
 - appropriate Australian (or international) standards or codes of practice.
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3.5.3 SUB-ELEMENT 4.2: HEALTH MONITORING SYSTEM**Standard:**

- 3.5.3.1 The diving contractor should monitor and evaluate the effects of the work environment on the health of employees.

Health monitoring

- 3.5.3.2 The diving contractor should demonstrate:

- a) employee health monitoring requirements are identified and procedures exist for conducting monitoring³⁶
- b) where required by legislation, the health of employees exposed to specified hazards is monitored and recorded
- c) employee health monitoring records are periodically reviewed and programs are established to reduce health risk
- d) pre-employment assessments are carried out on employees.

Rehabilitation

- 3.5.3.3 The diving contractor should demonstrate procedures exist for rehabilitation and supervised return to work for employees injured or suffering ill health.

3.5.4 SUB-ELEMENT 4.3: INCIDENT/HAZARD INVESTIGATING AND REPORTING**Standard**

- 3.5.4.1 The diving contractor has an effective system of reporting and investigating hazards and incidents and establishes measures to prevent recurrence.

Investigating and reporting

- 3.5.4.2 The diving contractor should demonstrate:

- a) procedures exist for reporting and investigating hazards and incidents and implementing corrective actions. The diving contractor should:
 - (i) indicate how the level of investigations is determined
 - (ii) specify the reporting requirements
 - (iii) indicate the roles and responsibilities of employees, supervisors, health and safety representatives and visitors for reporting and investigating incidents
 - (iv) indicate who is involved in the investigation of different categories of incident or accident
 - (v) indicate how the investigative information is used
 - (vi) indicate how the quality of the investigation is reviewed
 - (vii) indicate how the close-out of corrective actions is monitored

³⁶ **Guidance Note 36:** A program of employee health monitoring may consist of:

- pre-employment medicals
- ongoing medicals
- lifestyle assessments
- specific monitoring and analysis for identified hazards, for example hazardous substances and exposure effects, diving related illness etc.

- (viii) indicate how regulatory reporting requirements are satisfied
- (ix) indicate the methods of informing employees of significant incidents and corrective actions
- b) employees, supervisors, health and safety representatives and managers involved in incident and hazard investigation and reporting are trained and competent.

3.5.5 SUB-ELEMENT 4.4: HEALTH AND SAFETY INFORMATION AND REPORTS

Standard

- 3.5.5.1 The diving contractor should maintain a system for the analysis, dissemination, storage/archiving and retrieval of information relevant to health and safety.

Managing health and safety information

- 3.5.5.2 The diving contractor should demonstrate:
- a) procedures are in place for the collection, maintenance, and confidential retention of employee health and safety records
 - b) documents and data relevant to health and safety are collected, disseminated, filed and retained³⁷. The demonstration should indicate:
 - (i) the types of documents and data collected
 - (ii) how health and safety documents are used.

Analysis and reporting of health and safety performance data

- 3.5.5.3 The diving contractor should demonstrate:
- a) procedures exist for the collection and analysis of health and safety performance data. The diving contractor should describe the lead and lag indicators used for measuring health and safety performance³⁸
 - b) regular reports on health and safety performance are produced and disseminated to relevant personnel.

³⁷ **Guidance Note 37:** Documents, reports and data collected by the operator can include:

- safety alerts
- hazard and Incident reports
- log books
- audit close-out reports
- inspection maintenance records
- hazards registers or similar
- statistical information
- training records
- calibration results;
- non-destructive testing reports
- measures of injury or loss potential.

Where appropriate, analysis of the data should take place and reports should be developed that provide personnel with indicators of the effectiveness of the health and safety programs and initiatives. Reports and data should be retained for periods consistent with local legislation.

³⁸ **Guidance Note 38:** Procedures should specify the method of collecting and analysing incident data to provide information on the:

- location and nature of incidents
- frequency and severity of incidents
- effectiveness of hazard and risk controls.

This information should be provided to employees and to management to allow trends to be identified and performance to be monitored.

3.6 KEY ELEMENT 5.0 AUDITING AND REVIEW

3.6.1 AIM

3.6.1.1 The diving contractor should demonstrate the system for managing health and safety risk is implemented, effective and continually improving.

3.6.2 SUB-ELEMENT 5.1: DSMS AUDIT

Standard

3.6.2.1 The diving contractor should periodically verify the operation of the safety management arrangements.

Audit program

3.6.2.2 The diving contractor should demonstrate

- a) an audit program and procedures are established, implemented and maintained to verify that health and safety management arrangements are being operated to specified performance standards³⁹. The demonstration should indicate:
 - (i) the schedule of internal and independent audits
 - (ii) the methodology for conducting audits, including: audit scope and objectives, criteria for selection of audit teams and leaders and reporting requirements
 - (iii) how relevant employees are involved in the audit process
- b) procedures exist for the reporting of audit results and the implementation of corrective actions. The demonstration should indicate how:
 - (i) corrective actions and findings are recorded and prioritised
 - (ii) affected employees are made aware of audit results and corrective actions
 - (iii) corrective actions are reviewed for appropriateness prior to implementation
 - (iv) follow-up action is monitored for timely close-out

3.6.3 SUB-ELEMENT 5.2: REVIEW AND IMPROVEMENT

Standard

3.6.3.1 The diving contractor should regularly review the DSMS to assure the arrangements adopted are effective in meeting the diving contractor's policies and objectives.

Review and improvement

3.6.3.2 The diving contractor should demonstrate accountable senior management periodically review the effectiveness of the safety management system. The demonstration should indicate:

- a) when reviews take place and who is involved
- b) the sources of information used to determine if the system is adequate and policy is

³⁹ **Guidance Note 39:** The diving contractor's audit system should evaluate whether safety procedures and management arrangements are:

- documented
- implemented
- used as intended by the organisation
- effective (including closing out audit actions)

complied with and objectives are being met⁴⁰

- c) how the diving contractor makes use of the review
- d) how outcomes are communicated to employees
- e) what continuous improvement plans exist.

⁴⁰ **Guidance Note 40:** Information that may be used in a management review include:

- changes to legislation
- changes in business objectives and expectations
- changes in business/operational activities
- changes in technology
- changes in the organisations structure and personnel
- employee feedback
- results of audits and associated actions
- results of accident and incident investigations
- sampling of work practices
- sampling of safety perception/safety 'climate' (for example surveys)
- performance against objectives and targets
- review of community expectations

Information and benchmark data from other organisations and industries may also be used if appropriate.

4. GLOSSARY OF TERMS

4.1 GLOSSARY OF TERMS

This section should be read in conjunction with section 2.1.5, which provides regulatory definitions of terms provided in the OPGGS Act or the regulations. Definitions provided in section 2.1.5 have not been repeated here.

4.1.1 TERMS

Bell diving: carrying out diving operations using a close diving bell, otherwise known as a submersible diving chamber (SDC)

Bottom time: in relation to a dive, the total elapsed time from when a diver is subjected to pressure greater than atmospheric pressure until the time (next whole minute) when that diver's decompression begins (measured in minutes), and is used to determine that diver's decompression profile for that dive.

Breathing medium: gas or gases delivered to a diver for the purpose of life support.

Classifying Authority: an approved body qualified to:

- a) classify ships, barges or mobile platforms
- b) verify the design, construction and operating capability of diving plant and equipment.

Closed Bell: see diving bell.

Commonwealth waters: the waters of the sea that comprise the offshore areas of each State and of each Territory

Decompression sickness or decompression illness: trauma associated with and as a result of an inert gas coming out of solution and forming bubbles in the blood and tissues of a diver during or when the pressure is reduced, often to atmospheric pressure.

Designated Authority: defined in section 7 of the OPGGS Act.

Dive: the process of a diver, diving bell or a manned submersible entering the water and being subjected to pressure greater than normal atmospheric pressure.

Diver: any person who is engaged in diving operations for the purpose of diving – see regulation 4.1

Diver's attendant: a person, whether or not a diver, who is a member of a dive team and engaged in surface assistance to the diver.

Diver's stage: equipment, not being a closed diving bell, by which a diver is raised from or lowered to an underwater work-site and which is designed to carry more than one person.

Diving bell: (Also termed 'closed' diving bell or an SDC – submersible decompression chamber) any compression chamber which:

- c) is used to transport divers to and from the underwater work-site
- d) is designed for use under the surface of water in supporting human life.

Diving superintendent: a person placed in overall charge of an extensive diving operation to co-ordinate the

diving activities and to act as a stand-in for the diving supervisor where necessary.

Diving supervisor: a person who is appointed in writing to supervise diving operations.

Dynamic positioning: the positioning of or repositioning of a vessel in or to a chosen location by automatic means and without recourse to any physical mooring arrangements.

Equivalent airdepth: diving technique where the decompression required for a breathing mixture is based on the partial pressure of nitrogen (pN_{2mix}) in the breathing mixture equivalent to pN_{2air} in air for a particular depth. Used with enriched air/nitrox mixtures.

Emergency: an emergency affecting or likely to affect the health or safety of any person, the environment or the integrity of the facilities in the adjacent area.

Enriched air: breathing quality air that has had oxygen added to it, usually with oxygen percentage in the range of 30% to 40%. Also called nitrox.

Hazard: a source of potential harm or a situation with a potential to cause loss.

Inert gas: a discrete, gaseous component of the breathing medium which does not react with body tissue and is not chemically altered through contact with it.

Inspector: a person appointed under section 602 of the OPGGS Act.

Life support technician: a person who is responsible for maintaining suitable environmental parameters.

Loss: any negative consequence, financial or otherwise.

Limiting line: a line shown in dive tables which indicates time limits (bottom times) beyond which decompression schedules are less safe. Diving for periods indicated below this line carries a greater risk of decompression sickness and this risk increases with the increase in time.

Medical practitioner: a legally qualified medical practitioner.

Mixed gas: a mixture of discrete gases delivered to a diver as a breathing medium.

Nitrox: nitrogen and oxygen mixture used as a replacement for air in surface supplied diving. See enriched air.

Repetitive dive: any dive made by a diver within a period of a previous dive by that diver where excess residual inert gas is still present in the body tissues of that diver as a result of a previous dive. Typical periods are 12 – 18 hours and are usually table dependent.

Safety case: the safety case (within the meaning given by Part 2 of the Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009) in relation to the facility associated with a diving project.

Saturation diving: a diving technique where the diver has reached the full saturation state for the pressure and breathing mixture being used. When this state has been reached the time required for decompression is not further increased in relation to the duration of the dive.

Scuba: self-contained, underwater breathing apparatus. (Not regarded as a suitable technique for offshore diving operations).

Self-contained breathing equipment: equipment supplying a diver with breathing medium from cylinders

carried by that diver.

Surface oriented diving: diving operations conducted from the surface not involving a diving bell.

Surface supply breathing apparatus: equipment supplying a diver with breathing medium through a hose from a compressor or cylinders on the surface.

Wet bell: a specially designed, fully submersible diver's stage which can entrap a bubble of air or mixed gases and be used under water by a diver as a simple habitat or as a supply point for lightweight equipment required at a work-site.

4.2 COMMON DIVING ABBREVIATIONS

4.2.1 ABBREVIATIONS

Listed below are common abbreviations used in the occupational diving industry:

ABC	airway, breathing, circulation
AC	alternating current power
ADAS	Australian Diver Accreditation Scheme
Air	gas mixture of approximately 20% O ₂ and 80% N ₂
ALARP	as low as reasonably practicable
ANX	annexes
AS	Australian Standards
AS/NZS	Australian/New Zealand Standards
ATA	atmospheres absolute
ATM	atmospheres
BIBS	built in breathing system
BT	bottom time
CAR	client authorised representative
CO	carbon monoxide
CO ₂	carbon dioxide
CPR	cardio pulmonary resuscitation
CNS	central nervous system
dB	decibel
DCI	decompression illness
DCIEM	Defence and Civil Institute of Environmental Medicine - (Canada)
DCS	decompression sickness
DDC	deck decompression chamber
DMAC	Diving Medical Advisory Committee (IMCA)
DMT	diving medical technician
DP	dynamically positioned
DPI	dye penetrant inspection

DPP	diving project plan
DPV	dynamically positioned vessel
DRABC	danger, response, airway, breathing, circulation
DSMS	diving safety management system
DSV	diving support vessel
EAD	equivalent air depth
EAN	enriched air nitrox
EAR	expired air resuscitation
EBT	effective bottom time
ECU	environmental control unit
ELCB	earth leakage circuit breakers
ERP	emergency response plan
fpm/FPM	feet per minute
FSW	feet of sea water
GVI	general visual inspection
HAZOB	hazard observation
He	helium
SHLB	self-propelled hyperbaric lifeboat
HP	high pressure
HPNS	high pressure neurological syndrome
HRC	hyperbaric rescue chamber
HRF	hyperbaric reception facility
HSE UK	Health and Safety Executive United Kingdom
HUET	helicopter underwater escape training
IAW	in accordance with
IMCA	International Marine Contractors Association
IMO	International Maritime Organisation
JHA	job hazard analysis
JSA	job safety analysis
kg	kilograms
km	kilometres
KMB	kirby morgan band mask
kPa	kilopascals
LARS	launch and recovery system
lbs	pounds
LP	low pressure
lpm	litres per minute
LST	life support technician

LSS	life support supervisor
m	metres
mb	millibar
mm	millimetres
MPI	magnetic particle inspection
MSDS	materials safety data sheets
MSW	metres of sea water
NATA	National Association of Testing Authorities
N ₂	nitrogen
NITROX	Air in which the 21% O ₂ , 79% N ₂ has been changed, usually enriched air
NORM	naturally occurring radioactive material
OIM	Offshore Installation Manager
O ₂	oxygen
PIC	person in charge
PMS	planned maintenance system
PPE	personal protective equipment
ppm	parts per million
PpCO ₂	partial pressure of carbon dioxide
PpN ₂	partial pressure of nitrogen
PpO ₂	partial pressure of oxygen
PSU	power supply unit
PVHO	pressure vessel for human occupancy
QAS	quality assurance system
QMP	quality management plan
RA	risk assessment
RCC	recompression chamber
RCD	residual current device
RF	repetitive factor
RG	repetitive group
RM	risk management
RN	Royal Navy
ROV	remotely operated vehicle
SA	Standards Australia (formally called the Standards Association of Australia)
SATCOM	satellite communications
SCUBA	self-contained underwater breathing apparatus
SI or SF	surface interval
SMP	safety management plan
SN	safety notice

SOP	standard operating procedures
SR	safety representative
SSBA	surface supplied breathing apparatus
SUB	submarine
SUR 'D'O2	surface decompression on oxygen
SWL	safe working load
TUP	transfer under pressure
TV CAMERA	television camera
UPTD	unit of pulmonary toxicity dosage
USN	United States Navy
UT	ultrasonic thickness
VAC	volts alternating current
WOW	waiting on weather

5. SUPPLEMENTARY INFORMATION SOURCES

5.1 NOPSEMA GUIDANCE AND PUBLICATIONS

5.1.1 LEGISLATION

- 5.1.1.1 A copy of the Act and the Regulations (a legislative instrument) can be found at <https://www.legislation.gov.au/>

5.1.2 DIVING SPECIFIC PUBLICATIONS

- 5.1.2.1 Documents published by NOPSEMA that are relevant to diving operations are available on NOPSEMA's website at <https://www.nopsema.gov.au/safety/diving-operations/> and include the following:

- a) Register of diving safety management systems and diving project plans
- b) Diving submission assessment policy (N-04500-PL0054)
- c) Diving project plan concordance table (N-04500-FM1453)
- d) Diving safety management system concordance tables (N-04500-FM0711)
- e) Diving safety management system submission cover sheet (N-04500-FM1000).

5.1.3 GENERAL PUBLICATIONS

- 5.1.3.1 Other documents published by NOPSEMA that diving contractors and operators should consider when preparing and implementing a DSMS and/or DPP are available on NOPSEMA's website at <https://www.nopsema.gov.au/safety/safety-resources/> and include:

- a) Assessment policy (N-04000-PL0050)
- b) Making submissions to NOPSEMA guideline (N-04000-GL0225)
- c) Hazard identification guidance note (N-04300-GN0107)
- d) Risk assessment guidance note (N-04300-GN0165)
- e) ALARP guidance note (N-04300-GN0166)
- f) Control measures and performance standards guidance note (N-04300-GN0271)
- g) Involving the workforce guidance note (N-04300-GN1054)
- h) Emergency planning guidance note (N-04300-GN1053).

5.2 AUSTRALIAN AND INTERNATIONAL GUIDANCE AND PUBLICATIONS

5.2.1 UK HEALTH AND SAFETY EXECUTIVE

- 5.2.1.1 A range of publications, including the UK approved codes of practice and diving information sheets, are available at <http://www.hse.gov.uk/diving/index.htm>

5.2.2 INTERNATIONAL MARINE CONTRACTORS ASSOCIATION (IMCA)

- 5.2.2.1 The IMCA website can be found at <https://www.imca-int.com/publications/>.

Relevant publications include (but are not limited to) the Diving Code of Practice and a range of diving guidance and technical reports in the IMCA 'D' series, published by the Diving Division of IMCA

- 5.2.2.2 The publications of DMAC, the independent Diving Medical Advisory Committee, are also available from IMCA, [The Diving Medical Advisory Committee](#), or the DMAC website: <http://www.dmac-diving.org/>

5.2.3 INTERNATIONAL MARITIME ORGANISATION (IMO)

- 5.2.3.1 IMO documents the 'Code of Safety for Diving Systems' and the 'Guidelines and specifications for hyperbaric evacuation systems' are available on the IMO website at: <http://www.imo.org>

5.2.4 INTERNATIONAL ASSOCIATION OF OIL AND GAS PRODUCERS (IOGP)

- 5.2.4.1 The IOGP diving related publications include (but not limited to) the following:
- a) Diving Recommended Practice (Report No. 471)
 - b) Saturation Diving Emergency Hyperbaric Rescue Performance Requirements (Report No. 478)

All IOGP Diving publications can be found at <https://www.iogp.org/oil-and-gas-safety/diving/>