

**ADAS OFFSHORE  
SUPERVISOR  
LEGISLATION  
MODULE**

# 1 ROLES AND RESPONSIBILITIES OF THE OFFSHORE DIVING SUPERVISOR

## 1.1 GENERAL

---

### 1.1.1 ROLE OF DIVE SUPERVISOR UNDER NEW DIVE REGULATIONS

- 1.1.1.1 In 2002, the Commonwealth Government introduced new legislation to regulate the safety of underwater operations conducted in support of the offshore petroleum industry (the *Petroleum Submerged Lands*)(*Diving Safety*) *Regulations 2002* – the **Dive Regulations**).
- 1.1.1.2 The Commonwealth has since developed a new joint state/Commonwealth safety authority (the National Offshore Petroleum Safety and Environmental Management Authority– **NOPSEMA**), to regulate the safety of offshore petroleum activities. The Dive Regulations had minor amendments in 2005 to account for this change in the regulatory environment.
- 1.1.1.3 The **Dive Regulations** have since been updated and are now known as Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009. These regulations work in conjunction with the Offshore Petroleum & Greenhouse Gas Storage Act 2006.
- 1.1.1.4 A feature of these regulations is a legislated key role for diving supervisors and the spelling out in detail of their responsibilities in safeguarding the health and safety of divers.
- 1.1.1.5 Non-compliance by supervisors with the provisions of these regulations is now an offence with prescribed penalties.

## 1.2 REG 4.22 - APPOINTMENT OF DIVING SUPERVISORS

---

### 1.2.1 REG 4.22(1) - CONTRACTOR MUST APPOINT SUPERVISOR(S)

- 1.2.1.1 Regulation 4.22(1) requires that 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 to be carried out as part of the operation.
- 1.2.1.2 Regulation 4.16(3) provides that the diving project plan must not specify as a *diving operation* (as defined) any task that is too big or too complex to be supervised safely by one supervisor.

### 1.2.2 NUMBER OF SUPERVISORS REQUIRED

- 1.2.2.1 For each diving project, the diving contractor must evaluate how much of the project can be supervised safely by one person.
- 1.2.2.2 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.
- 1.2.2.3 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.
- 1.2.2.4 In particular, each supervisor must have immediate overriding control of all safety aspects for the diving operation for which he or she is appointed.

- 1.2.2.5 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.
  - 1.2.2.5.1 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.
  - 1.2.2.5.2 The name of the supervisor in control should be recorded in the diving operation record with hand-over's for relief, or other purposes, also recorded. This may be achieved by utilising a suitably qualified and appointed superintendent and a third diving supervisor.

## **1.2.3 SUPERVISORS TO BE ADAS QUALIFIED**

- 1.2.3.1 These Regulations mandate that divers and supervisors must be accredited under the Australian Diver Accreditation Scheme in order to undertake offshore diving operations.
- 1.2.3.2 The Australian Diver Accreditation Scheme (ADAS) is a not-for-profit occupational diver training and accreditation developed by the Commonwealth Government and administered by the Board of ADAS on behalf of the Commonwealth Department of Resources, Energy and Tourism (RET) on a cost-recovery basis.
- 1.2.3.3 The Government accepts that other diving and supervisor qualifications exist that are comparable to ADAS and are at a level acceptable to industry. The Government is unwilling to mandate those qualifications, however, as it has no control over the current or future quality control of the underlying training and assessment or of the continued conditions and standards to which the training and assessment is undertaken.

## **1.2.4 SUPERVISORS TO BE COMPETENT**

- 1.2.4.1 The diving contractor must consider the competence of a person before appointing him or her as a supervisor. When considering competence, the diving contractor should consider the knowledge, skills and aptitude of the candidate. Competence assessments should include matters such as 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 he or she is appointed.
- 1.2.4.2 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 take charge of an air operation only is not qualified to take charge of a bell operation whereas a bell diving supervisor is qualified to take charge of both types of operation. Any person appointed as a supervisor under these Guidelines must possess the correct certificate for the planned diving operation.

## **1.2.5 FIRST AID AND DIVING MEDICINE**

- 1.2.5.1 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.
- 1.2.5.2 As the supervisor is the person responsible for staff under his control (including any divers undergoing hyperbaric treatment), supervisors require the knowledge and experience to make competent assessments in such situations.
- 1.2.5.3 Whilst a current qualification as a Diver Medical Technician (DMT) is not required, it is expected that supervisors will have been trained in the recognition and first aid management of diving related medical problems and communicating findings to medical support.
- 1.2.5.4 Supervisors must also maintain a current first aid certificate incorporating or supplemented by an oxygen administration course. First Aid competency shall be maintained through regular practice and attendance at a formal refresher course and re-certification every 3 years.

- 1.2.5.4.1 Current competency in CPR and oxygen resuscitation is to be refreshed or demonstrated to a first aid instructor or other competent person (medico, EMT, rig medic) on at least an annual basis and a record of such proficiency review maintained by the supervisor.

## **1.3 REG 4.23 - DUTIES AND RESPONSIBILITIES OF SUPERVISORS UNDER THE REGULATIONS**

---

### **1.3.1 DUTIES OF DIVING SUPERVISORS**

- 1.3.1.1 The extent of a supervisor's duties and responsibilities are largely detailed in Regulation 4.23 but are extended and/or supplemented throughout the other regulations. The material in this section should therefore be read in conjunction with the remainder of this document.

### **1.3.2 REG 4.23 - DUTIES OF DIVING SUPERVISORS**

- 1.3.2.1 The duties of the offshore supervisor as detailed in regulation 4.23 are as follows:

(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 or anybody taking part in it or of anyone else who may be affected by it; and*
- (ii) *in accordance with the law; and*
- (iii) *in accordance with the accepted DSMS for the operation; and*
- (iv) *in accordance with the relevant diving project plan; and*

(b) *to countersign entries about the operation in divers' log books; and*

(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.*

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

*Penalty: 20 penalty units.*

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

*Note 2 Regulation 4.27 requires a diving supervisor to maintain a diving operations record.*

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

## 1.3.3 PARTICULAR IMPLICATIONS OF REGULATION 4.23

- 1.3.3.1 Supervisor should take special note of two particularly significant provisions in subregulation 1 of this regulation. These place on them specific legal obligation: “*to ensure that the diving operation is carried out 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; and in accordance with the law* and have far reaching effect on all offshore supervisors.
- 1.3.3.2 The first provision – the requirement to ensure that the diving operation is carried out “**as far as reasonably practicable without risk**” - places substantial responsibility on supervisors from which they cannot resile.
- 1.3.3.2.1 Supervisors must conduct their diving operations with a view to identifying and assessing all of the risks to which the extended dive team can be subject and use their professional and expert judgment in determining whether or not they have been reduced sufficiently to comply with their responsibilities.
- 1.3.3.3 The latter provision means that supervisors are legally required to take into account - and comply with - all the provisions of these regulations and any other relevant legislation in conducting diving operations.
- 1.3.3.3.1 From this provision, offshore supervisors have a legal responsibility to know in detail the legislation – in particular the provisions of the Dive Regulations – that impacts on the conduct of their duties.
- 1.3.3.3.2 When conducting diving operations, supervisors must ensure that they comply with the requirements of the Dive Regulations and any other relevant legislation.
- 1.3.3.4 From just these two provisions, supervisors have received mandated responsibilities which extend far beyond the immediacy of the dive plan and the dive site.
- 1.3.3.4.1 They must be aware of and take into account the breadth of the requirements found in all of the provisions of these regulations and any other relevant law and they must ensure that their diving operations are conducted in compliance with them.
- 1.3.3.4.2 They must be able to substantiate that they have the professional and expert judgement to identify and assess all of the risks to which the dive team can be subject and determine whether or not all the likely risks from the diving operation have been reduced sufficiently to comply with their responsibilities under the regulations and the general law.
- 1.3.3.5 Supervisors should approach the following material acknowledging the impact of the old saying – ignorance is no excuse under the law!!

## 1.4 DETAILS OF SUPERVISOR DUTIES UNDER REGULATION 4.23

---

### 1.4.1 REG 4.23(1)(A)(I) - AS FAR AS REASONABLY PRACTICABLE DIVING TO BE WITHOUT RISK

- 1.4.1.1 Under this regulation, the supervisor has a legal 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.
- 1.4.1.2 This and the similar term ‘**as low as reasonably practicable**’ (ALARP), are used throughout the diving safety and associated legislation and are basically interchangeable.
- 1.4.1.3 To reduce a risk **as low or 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.

- 1.4.1.4 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. If, however, the consequences and the extent of a risk are small, insistence on great expense would not be considered reasonable.
  - 1.4.1.4.1 It is important to remember that the judgment is an objective one and the size or financial position of the employer is immaterial.
- 1.4.1.5 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.
- 1.4.1.6 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.
- 1.4.1.7 It is not possible to define ALARP in purely objective and absolute terms. There will always be a need for experienced judgement and subjective opinion - and hence always the potential for debate. Ultimately, whether ALARP has been reached may need to be decided in a court.
- 1.4.1.8 A working definition of when a risk is ALARP includes:
  - 1.4.1.8.1 the use of best available technology capable of being installed, operated and maintained in the work environment by the people prepared to work in that environment;
  - 1.4.1.8.2 the use of the best operable and maintainable management systems relevant to safety;
  - 1.4.1.8.3 the maintenance of the equipment and management systems to a high standard; and
  - 1.4.1.8.4 exposure of employees to a level of risk which is low.
- 1.4.1.9 Additionally, the concept of 'reasonable practicability' recognises that the cost and physical difficulty of avoiding the risk plays a part in the decision as to whether or not the risk levels associated with control measures adopted are acceptable. The decision will also take into consideration prevailing industry etc standards and the knowledge of the hazards and risks by personnel involved in the operation.
- 1.4.1.10 As noted above, ALARP is not an absolute term - it is relative to the state of knowledge and technical development at any one time. Continued 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.

## **1.4.2 REG 4.23(1)(A)(II) - IN ACCORDANCE WITH THE LAW**

- 1.4.2.1 This provision means that supervisors are legally required to take into account, and comply with, all the provisions of these regulations - and any other legislation relevant to the situation - in conducting diving operations.
- 1.4.2.2 It would seem clear that all persons have a duty to comply with the law in all circumstances.
  - 1.4.2.2.1 This provision, however, reinforces this self-evident truth by re-stating it in these regulations as a mandatory duty of the supervisor.
  - 1.4.2.2.2 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.

- 1.4.2.2.3 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.

## **1.4.3 REG 4.23(1)(A)(III) & (IV) - DIVING TO BE IN ACCORDANCE WITH DSMS AND PROJECT PLAN**

- 1.4.3.1 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 the safety regulator; 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 contractor's Diving Safety Management System (DSMS – see Chapter 3 of this document for further information), the Diving Project Plan (see Chapter 4 of this document) and the site-specific risk assessment. They should ensure that:
- 1.4.3.1.1 the diving operation that they are being asked to supervise complies with the requirements of this Code
  - 1.4.3.1.2 the proposed dive site and the water and weather conditions are suitable
  - 1.4.3.1.3 the risk assessment is still current for the circumstances prevailing on the day and during the dive
  - 1.4.3.1.4 they understand their own areas and levels of responsibility and who is responsible for any other relevant areas
  - 1.4.3.1.5 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
  - 1.4.3.1.6 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
  - 1.4.3.1.7 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
  - 1.4.3.1.8 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
  - 1.4.3.1.9 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
  - 1.4.3.1.10 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

- 1.4.3.1.11 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 4.27)
- 1.4.3.1.12 they are able to see divers in the bell or the compression chamber during saturation operations
- 1.4.3.1.13 they maintain the diving operation record throughout the diving operation for which they are responsible.

## 1.4.4 REG 4.23(1)(B) - SUPERVISOR TO COUNTERSIGN ENTRIES DIVERS' LOG BOOKS

- 1.4.4.1 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.
- 1.4.4.2 Contractor's should have mechanisms in place to ensure that diver' 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.

## 1.4.5 REG 4.23(C) - SUPERVISOR TO REPORT ACCIDENTS, INJURIES AND SIGNIFICANT INCIDENTS

- 1.4.5.1 The supervisor has a responsibility to report to the operator:
  - 1.4.5.1.1 the death of, or serious personal injury to, a person; and/or
  - 1.4.5.1.2 the incapacitation of a person that prevents the person from performing work for a period of 3 or more days; and/or
  - 1.4.5.1.3 an event that could reasonably have led to a consequence of the type mentioned in subparagraph (i) or (ii);
  - 1.4.5.1.4 a decompression illness
  - 1.4.5.1.5 a pulmonary barotrauma
  - 1.4.5.1.6 a case of omitted decompression an emergency deployment of the standby diver
  - 1.4.5.1.7 a failure of life support equipment or man riding equipment
- 1.4.5.2 Note that the requirement includes near misses that reasonably **may have** resulted in the death of or serious injury to a person or a lost time injury of 3 or more days.
- 1.4.5.3 The operator has primary responsibility for reporting to NOPSEMA all activities, incidents and accidents that occur on the facility or within its vicinity.
  - 1.4.5.3.1 Amongst other things, the operator has a duty under the *Offshore Petroleum and Greenhouse Gas Storage (Safety Regulations 2009 (OPGGSA Regulations))* to report significant accidents and incidents to NOPSEMA - initially at the earliest practicable opportunity but at the latest within two hours of the first occurrence of the event.
- 1.4.5.4 For all intents and purposes, "**as soon as practicable**" means "immediately". There is an expectation inherent in the term that the report will be made at once unless there is something that is more urgent that must be done first (eg, saving life or limb or preventing the spread of a fire, organising rescue, mounting a response, etc) or there is something that physically



prevents the report from being made (eg, injury to the reporter, communications are down, etc and there is no one to make this report until after such other actions are taken).

- 1.4.5.5 This provision places a duty on the supervisor to ensure that the operator is informed of the details of any such event in sufficient time to comply with the operator's duty to report to NOPSEMA as soon as practicable after the event.
- 1.4.5.6 The report in the first instance may be verbal or written. The report must contain all material details about the relevant accident or incident that are available to the person giving the notice at the time the notice is given.
- 1.4.5.7 "Material" in this context means "important; essential, relevant". NOPSEMA will want to know at least (if possible):
  - 1.4.5.7.1 the location of the event
  - 1.4.5.7.2 the approximate time of occurrence
  - 1.4.5.7.3 whether persons been killed or injured
  - 1.4.5.7.4 an indication of the scale of the event (how many casualties, how much damage)
  - 1.4.5.7.5 is the event ongoing or under control
  - 1.4.5.7.6 who the contact persons are (both on the beach and on the facility).
  - 1.4.5.7.7 If other details are available and the situation is sufficiently under control, then they should be given as well.
- 1.4.5.8 The responsible person (operator, diving contractor or dive supervisor, depending on the circumstances) is further required to make a full written report of all of the circumstances relevant to the event. The report should contain all the details concerning casualties, the location, time and date, immediate cause and root cause (if they been ascertained), copies of any in-house or independent investigation reports, technical assessments and analysis, damage reports, recommendations and corrective actions taken.
- 1.4.5.9 The report must be made available to NOPSEMA within the period specified in writing (including by e-mail or fax) by NOPSEMA. If a period not specified, the report must be supplied as soon as practicable.
- 1.4.5.10 In the case of the aftermath of a significant accident or incident, it is obvious that there will be many things that have to be done before reporting fully to the regulator. The principle to be observed here should be that the report is made without undue delay as soon as the situation is under control and sufficient of the facts are known.
- 1.4.5.11 It is worth noting that the OPGGSA Regulations (noted above) specify that this full report must be made at the earliest practicable opportunity but within 3 days. If it is a major event, or it is obvious that ascertaining sufficient facts will take a significant period of time, the responsible person should liaise with NOPSEMA to agree a reasonable time.

## **1.4.6 REG 4.23(6) - IF NO OPERATOR FOR DIVING PROJECT**

- 1.4.6.1 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. In such circumstances, NOPSEMA is required by these Regulations to take the place of the operator. This is such a circumstance, and the supervisor must report any significant accident or incident to NOPSEMA **as soon as practicable** after the event but at the latest within two hours.

## **1.4.7 REG 4.23(2) - SUPERVISOR WHO FAILS TO COMPLY COMMITS OFFENCE**

- 1.4.7.1 These regulations place legal duties on the supervisor. If the supervisor fails to carry out in a reasonable manner those duties as required by Regulation 4.23(1), the supervisor is contravening the law and may be guilty of an offence.
- 1.4.7.2 In 2012, the maximum penalty for this offence is 20 penalty units (see Clause 2.3 of this document for further information on offences).

## **1.4.8 REG 4.23(3) - SUPERVISOR MAY GIVE REASONABLE DIRECTIONS**

- 1.4.8.1 The supervisor is empowered by this Regulation to give reasonable orders in relation to:
- 1.4.8.1.1 any matter in the diving project plan
  - 1.4.8.1.2 any matter affecting the health and safety of any person taking part in the diving operation
- 1.4.8.2 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.
- 1.4.8.3 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.
- 1.4.8.4 The authority provided by the regulation is restricted to persons taking part in the diving operation.
- 1.4.8.4.1 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.
  - 1.4.8.4.2 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.
- 1.4.8.5 Regulation 4.20(2) requires all persons engaged in a diving operation to comply with such instructions given by the supervisor about:
- 1.4.8.5.1 a matter in the diving project plan; or
  - 1.4.8.5.2 in relation to health and safety to any person taking part in the diving operation (as per Reg 4.23(3) above).
- 1.4.8.6 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.

## **1.4.9 REG 4.23(4) - SUPERVISOR MAY NOT DIVE**

- 1.4.9.1 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 provision 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.
- 1.4.9.2 It is a defence 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.

## **1.4.10 REG 4.23(2) - SUPERVISOR WHO FAILS TO COMPLY COMMITS OFFENCE**

- 1.4.10.1 These regulations place legal duties on the supervisor. If the supervisor fails to carry out in a reasonable manner those duties as required by Regulation 4.23(2), the supervisor is contravening the law and may be guilty of an offence.
- 1.4.10.2 In 2012, the maximum penalty for this offence is 20 penalty units (see Clause 2.3 of this document for further information on offences).

## **1.4.11 REG 4.23(5) - SUPERVISOR MUST BRIEF ALL PERSONNEL**

- 1.4.11.1 This provision 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.

## **1.4.12 REG 4.23(2) & (4) & (5) - SUPERVISOR WHO FAILS TO COMPLY COMMITS OFFENCE**

- 1.4.12.1 These regulations place legal duties on the supervisor. If the supervisor fails to carry out in a reasonable manner those duties as required by Regulation 4.23(2), Regulation 4.23(4) and Regulation 4.23(5), the supervisor is contravening the law and may be guilty of an offence.
- 1.4.12.2 In 2012, the maximum penalty for these offences is 20 penalty units (see Clause 2.3 of this document for further information on offences).

## **1.5 ADDITIONAL SPECIFIC SUPERVISOR DUTIES**

---

### **1.5.1 REG 4.25(2) - DIVER NOT TO DIVE UNLESS COMPETENT FOR TASK**

- 1.5.1.1 This provision requires the supervisor for a diving operation not to allow any diver to dive in the operation unless the diver is competent.
- 1.5.1.2 "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.
- 1.5.1.3 This provision is consistent with the general requirement of work 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.
- 1.5.1.4 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.
- 1.5.1.5 This provision 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.

### **1.5.2 REG 4.25(4) - DIVER NOT TO DIVE UNLESS ADAS CERTIFIED**

- 1.5.2.1 This provision 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 (see Clause 2.3 of this document for further information on offences).

### **1.5.3 REG 4.25(6) - DIVER NOT TO DIVE WITHOUT VALID MEDICAL CERTIFICATE**

- 1.5.3.1 The supervisor for a diving operation must not to allow any diver to dive in the operation unless the diver has a valid medical certificate (as defined in Regulation 4.26).

- 1.5.3.2 Persons undertaking underwater operations inside a manned submersible craft where the pressure is at one atmosphere do not require a diving medical certificate, although they may be required to conform to other medical standards as applied by the operator etc.
- 1.5.3.3 Persons undertaking diving in a recompression chamber are exempted from the necessity to have a valid diving medical certificate if the diving is being undertaken solely for the purpose of providing medical care to an injured person. This is in recognition of the defence provided by Section 10.3 of the Criminal Code of sudden or extraordinary emergency.
- 1.5.3.4 See Clauses 8.1.3 and 8.1.4 of this document for further information on valid medical certificates.

## **1.5.4 REGULATIONS 4.25(2) &(4) & (6) - SUPERVISOR WHO FAILS TO COMPLY COMMITS OFFENCE**

- 1.5.4.1 These regulations place legal duties on the supervisor. If the supervisor fails to carry out in a reasonable manner those duties as required by sub-regulation 4.25(2), sub-regulation 4.25(4) and sub-regulation 4.25(6), the supervisor is contravening the law and may be guilty of an offence.
- 1.5.4.2 In 2012, the maximum penalty for these offences is 20 penalty units (see Clause 2.3 of this document for further information on offences).
- 1.5.4.3 Strict liability applies to the circumstance in sub regulations (2), (4) and (6) (see Clause 2.3 of this document for further information on offences).

## **1.5.5 REG 4.27(1), (2), (3) & (4) - SUPERVISOR TO MAINTAIN A DIVING OPERATIONS RECORD**

- 1.5.5.1 It is a legal duty of every diving supervisor subject to these Regulations to ensure that a record of every diving operation supervised by that person is kept in the form detailed in the Regulations.
  - 1.5.5.1.1 Once this document contains information relevant to a diving operation it becomes a legal document and can be referred as evidence of what did or did not happen during a particular operation. To that end, diving supervisors must ensure that the record is a true and correct and comprehensive account of the operation.
- 1.5.5.2 This provision 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.
  - 1.5.5.2.1 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.
- 1.5.5.3 Regulation 4.27(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:
  - 1.5.5.3.1 the date to which the entry relates
  - 1.5.5.3.2 the diving contractor's name and address
  - 1.5.5.3.3 the name of the diving supervisor, or the names of the diving supervisors, who supervised the operation
  - 1.5.5.3.4 the location of the diving operation (including, if the diving was done from a vessel or installation, its name)

- 1.5.5.3.5 the name of each person who took part in the operation (whether as a diver or as a member of a dive team)
- 1.5.5.3.6 the name of each person who took part as a diver or stand-by diver in the operation
- 1.5.5.3.7 the purpose of the diving operation
- 1.5.5.3.8 for each diver — the breathing apparatus and breathing mixture used
- 1.5.5.3.9 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
- 1.5.5.3.10 for each diver — the maximum depth reached
- 1.5.5.3.11 the decompression schedule followed including, for each diver, details of the depths and the duration at each depth during decompression
- 1.5.5.3.12 details of any emergency or incident of special note that happened during the operation
- 1.5.5.3.13 details of any decompression illness and any treatment given
- 1.5.5.3.14 details of any significant defect or significant failure of diving plant or equipment used in the operation
- 1.5.5.3.15 details of any environmental factors relevant to the operation
- 1.5.5.3.16 anything else that is likely to affect the health or safety of anybody who took part in the operation

## **1.5.6 REG 4.27(5) - SUPERVISOR TO SIGN EACH PAGE OF ENTRY**

- 1.5.6.1 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.
- 1.5.6.2 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.
- 1.5.6.3 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.

## **1.5.7 REG 4.27(1), (4), & (5) - SUPERVISOR WHO FAILS TO COMPLY COMMITS OFFENCE**

- 1.5.7.1 These regulations place legal duties on the supervisor. If the supervisor fails to carry out in a reasonable manner those duties as required by sub-regulation 4.27(1), sub-regulation 4.27(4) and sub-regulation 4.27(5), the supervisor is contravening the law and may be guilty of an offence.
- 1.5.7.2 In 2012, the maximum penalty for an offence under sub-regulation 4.27(1) is 50 penalty units. Offences against sub-regulation 4.27(4) and sub-regulation 4.27(5) may bring a maximum penalty of 10 penalty units (see Clause 2.3 of this document for further information on offences).

## **1.5.8 REG 4.27(6) - CONTRACTOR TO KEEP OPERATIONS RECORD FOR 7 YEARS**

- 1.5.8.1 Every record of a diving operation conducted by a diving contractor must be kept in safe conditions for seven (7) 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.

## 2 OVERVIEW OF THE DIVING SAFETY REGULATIONS

### 2.1 INTRODUCTION

---

#### 2.1.1 IMPLEMENTATION OF NEW REGULATIONS

- 2.1.1.1 In 2002, the Commonwealth Government introduced new regulations to legislate underwater operations conducted in support of the offshore petroleum industry. The new regulations - entitled the *Petroleum (Submerged Lands) (Diving Safety) Regulations 2002* (the **Dive Regulations**) – came into force on 27 May 2003 and have since had a number of minor amendments made to them. The regulations are now titled the *Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009*. The regulations may be viewed at [www.nopsema.gov.au/legislation-and-regulations/safety-health/](http://www.nopsema.gov.au/legislation-and-regulations/safety-health/)
- 2.1.1.2 The Dive Regulations are a part of the overall legislative framework for the regulating of safety in offshore oil and gas activities. The Dive Regulations are designed to complement and to work in conjunction with the safety philosophy expressed in the main set of regulations which cover general offshore safety matters relating to the prevention of major catastrophic accidents – the *Offshore Petroleum (Safety) Regulations 2009* (**OPSR Regulations**).
- 2.1.1.3 The following general material sets the context in which the Diving Regulations operate and explains why they are structured as they are.
- 2.1.1.4 The Dive Regulations are supported by the *Petroleum (Submerged Lands) (Diving Safety) Regulations 2002 - Diving Guidelines* (**the Guidelines**). The Guidelines give a more detailed coverage of the Dive Regulations than this document and may be viewed at [www.nopsema.gov.au/diving](http://www.nopsema.gov.au/diving)

#### 2.1.2 BACKGROUND AND CONTEXT

- 2.1.2.1 All activities in relation to the exploration, drilling, recovery, production and/or processing of oil and gas in offshore waters are regulated under either Commonwealth or State legislation.
- 2.1.2.1.1 Whilst the situation is actually a little more complex, in simple terms, if the operation is taking place within 3 miles of the coastline, it belongs to and is regulated by the state, if it is outside the 3 mile limit, it belongs to and is regulated by the Commonwealth.
- 2.1.2.2 In practice, both jurisdictions have agreed to mirror each other's legislation and safety regulation is undertaken for all jurisdictions by a joint state/Commonwealth authority - The National Offshore Petroleum Safety Authority (**NOPSEMA**).
- 2.1.2.3 Offshore safety matters are regulated under what is called an 'objective-based' or 'goal-setting' regime.
- 2.1.2.3.1 Under this approach, the government sets the broad safety goals or objectives that it wants to accomplish and theoretically leaves it up to the individual industry members to decide how they achieve those objectives.
- 2.1.2.3.2 The OPSR Regulations and the Dive Regulations are examples of this approach. They set a broad requirement that the risks involved in operating a petroleum facility or undertaking diving operations conducted in support of offshore petroleum activities be conducted so that risks to personnel are reduced to as low as reasonable practicable.
- 2.1.2.4 In practice, however, the government (working with the industry) generally identifies, or develops, detailed standards, guidelines or codes of practices which are accepted as

guidance as to the standards, practices and procedures which are considered appropriate for safely undertaking specified activities.

- 2.1.2.4.1 If an organisation complies with such guidance, it will generally be held to be in compliance with the regulations.
- 2.1.2.4.2 An example of such guidance is the *Guidelines for Complying with the Petroleum (Submerged Lands) (Diving Safety) Regulations 2002 (the Guidelines)*. These flesh out the Dive Regulations by giving examples of what is considered to be reasonable practice in achieving ALARP for specific requirements.
- 2.1.2.5 An organisation may choose, however, to follow a different standard or to undertake an activity in a different way, and still operate safely. It will, however, generally have to convince the regulator that such standard or procedure/practice is appropriate before it is allowed to operate.
- 2.1.2.6 Whether it chooses to follow the guidance or not, the organisation is required to prepare a case to the safety regulator justifying its specific approach and demonstrating that it has or will achieve a safety outcome and that it has achieved ALARP.

## 2.1.3 SAFETY CASE REGIME

- 2.1.3.1 In Australian offshore oil and gas operations, as with those of many other leading nations, this process is known as preparing a “safety case”.
  - 2.1.3.1.1 Each operator of an oil and gas facility has to develop a detailed document (or set of documents – the ‘safety case’) which outlines the types of safety studies undertaken and the results obtained, and the management arrangements which will be implemented to ensure the continued safety of the facility and the people on it.
- 2.1.3.2 In making this “case for safety”, each operator must demonstrate to the satisfaction of the regulator that it:
  - 2.1.3.2.1 knows all the technical and human activities which occur on its facility;
  - 2.1.3.2.2 has identified all potential hazards and has determined the risk they pose to persons associated with the facility;
  - 2.1.3.2.3 has determined how they are to be managed how safety will be assured in the event of an emergency.
- 2.1.3.3 The main management tool resulting from this process is the development of a **Safety Management System (SMS)** for the facility, which systematically, explicitly and comprehensively details the standards, procedures, practices and processes which will be used on a day-by-day basis to manage the identified safety risks for all aspects of the facility’s operations.
- 2.1.3.4 No operations can be conducted on a facility unless the regulator has assessed the facility safety case and, being reasonably satisfied that it is appropriate to the facility and satisfies the safety requirements of the regulations, has formally accepted it.
- 2.1.3.5 Intrinsic to the philosophy of the safety case approach, employees who are subject to the risks of operating the facility must be involved in preparing the SMS and their views taken into account, and the operator must also identify methods to be used for monitoring and reviewing all activities in connection with the facility with a view to the continual improvement of safety of the facility.



## 2.2 OVERVIEW OF NEW OFFSHORE DIVE REGULATIONS

---

### 2.2.1 GENERAL

- 2.2.1.1 The general objectives of the Dive Regulations are to ensure that underwater operations conducted as part of offshore petroleum exploration and development are performed in a way that is consistent with international best safety practice and that ensures risks to the health and safety of employees are reduced as low as reasonably practicable (**ALARP**) and are acceptable.
- 2.2.1.2 More direct objectives are to encourage continuous improvements in risk management and safety performance and to enable industry to adopt safety management practices and technologies best suited to individual company circumstances, activities and locations.
- 2.2.1.3 The structure of the Dive Regulations is modelled on the general safety case framework. Similar to the facility safety case system, the Dive Regulations:
- 2.2.1.3.1 set a broad goal of reducing risks to ALARP
  - 2.2.1.3.2 require the operator and dive contractor to develop a detailed safety management system (**the Diving Safety Management System – DSMS**) for managing all diving operations connected with underwater petroleum activities:
    - consistent with the organisations standards, practices and procedures documented in the DSMS, the Diving Contractor must prepare a Diving Project Plan to manage each diving operation
    - this plan is specific to the particular circumstances of a diving operation and must take into account relevant factors affecting the dive and provide a bridge to mesh the critical (emergency etc) procedures of the diving project team and the facility
  - 2.2.1.3.3 require that persons subject to the risk of the diving operations, including divers, are consulted in relation to the development of the DSMS and subsequent Diving Project Plans
  - 2.2.1.3.4 require that the diving contractor's operations, standards, practices and procedures are systematically reviewed and revised where necessary to ensure continuous improvement
- 2.2.1.4 Also similar to the OPSR Regulations, the Dive Regulations combine goal-setting with a number of prescriptive specific requirements which are not negotiable, such as minimum competence/qualifications of divers and supervisors, accident/incident reporting requirements, maximum depths, record keeping etc).
- 2.2.1.4.1 Importantly, as with other offshore safety regulations, they require consultation with divers and other employees who will be subject to the risk of the operations and commitment to continuous improvement.

### 2.2.2 DIVING SAFETY MANAGEMENT SYSTEM

- 2.2.2.1 As noted above, the Dive Regulations are modelled on and are consistent with the safety and operational philosophy of the safety case regime. Under the Dive Regulations:
- 2.2.2.1.1 Diving Contractors are required to submit to NOPSEMA a Diving Safety Management System (**DSMS**) that includes a description of their operating policies and procedures, an assessment of safety risks and effects and setting out the proposed safety performance standards for the activity and the criteria to be used to measure whether the standards have been met

- 2.2.2.1.2 NOPSEMA must then assesses the submission for appropriateness, relevance and completeness and assesses whether the risks and effects have been reduced to ALARP and are acceptable
  - 2.2.2.1.3 appropriate employee consultation must be undertaken in the development and assessment of the DSMS
  - 2.2.2.1.4 the DSMS must be formally accepted by NOPSEMA and entered on a Register of DSMS's before a diving contractor can commence diving operations
- 2.2.2.2 The safety performance standards must be tailored to the actual operating environment. It is possible that different diving contractors will propose, and have accepted, different practices and systems tailored to individual circumstances, activities and locations to achieve the same objective. It is possible also that there will be differences between the agreed operational standards applying in different regions on, for example, seasonal or local safety considerations.
- 2.2.2.3 The DSMS, when accepted, applies to all offshore petroleum diving operations undertaken in Commonwealth and state waters and become the legally binding conditions under which the diving contractor operate
- 2.2.2.3.1 It sets out the safety performance objectives, standards and criteria against which the diving contractor is assessed by the safety regulator.
- 2.2.2.4 If a diving contractor is not complying with the agreed DSMS, the regulator can withdraw acceptance of the DSMS, and the contractor must then cease undertaking underwater operations.

## 2.2.3 DIVING PROJECT PLAN

- 2.2.3.1 The policies, standards, procedures and practices codified in the DSMS provide the basis for and underpin the **Diving Project Plans** which must be developed for every diving project.
  - 2.2.3.1.1 The diving project plan must address all site and operation specific issues particular to each project (depth, current, mode of operation, number of dives, interfaces with other operations and contractors, etc).
- 2.2.3.2 The diving project plan also acts as a bridging document with the practices and procedures of the parent facility safety case (particularly for simultaneous operations and emergency response, evacuation and rescue).

## 2.2.4 GUIDELINES

- 2.2.4.1 The Dive Regulations are supported by the Petroleum (Submerged Lands) (Diving Safety) Regulations 2002 - Diving Guidelines (**the Guidelines**).
- 2.2.4.2 Comprehensive non-mandatory guidance is provided in the Guidelines to assist industry in complying with the regulations and for NOPSEMA in their administration of the Dive Regulations.
- 2.2.4.3 The guidelines outline the types of matters that should be addressed or considered in preparing a DSMS and in complying with the Regulations and offers guidance as to what are appropriate standards, procedures and practices for use in offshore petroleum diving operations.

## 2.2.5 DIFFERENCES BETWEEN AUSTRALIAN AND UK REGULATIONS

- 2.2.5.1 In the United Kingdom (UK), an Approved Guideline of Practice (ACOP) has special meaning under UK law.
- 2.2.5.2 Non-compliance with an ACOP in the UK may be reason in itself for prosecution under the Act.

# AUSTRALIAN DIVER ACCREDITATION SCHEME

- 2.2.5.3 In Australia, Codes of Practice and guidelines are used. These have different legal status from an ACOP and only have evidentially status if a prosecution is raised through Regulation.
- 2.2.5.4 The Dive Regulations require the formulation of a Diving Safety Management System (DSMS) by diving contractors.
- 2.2.5.5 Diving contractors are required to submit and request the acceptance of the DSMS by the regulator.
- 2.2.5.5.1 This is in effect a means of accrediting dive contractors to undertake offshore diving operations by ensuring that they have a comprehensive and satisfactory safety management system.
- 2.2.5.5.2 The UK system does not require a DSMS.
- 2.2.5.6 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.
- 2.2.5.7 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 form the rules by which the diving project must proceed.
- 2.2.5.7.1 The UK system also requires a diving project plan covering all the same requirements.
- 2.2.5.8 Any works conducted that do not comply with the DSMS and the diving project plan will be in breach of the Dive Regulations.
- 2.2.5.9 Summary of differences between Australian and UK diving regulation

	<b>Australia</b>	<b>UK</b>
Regulations	Apply to all	Apply to all
Diving Safety Management System (DSMS)	Regulations require Diving contractor to have DSMS DSMS to be accepted by regulator DSMS to be followed	NA
Diving Project Plan	Regulations require Diving Project Plan Operator to approve Project Plan Plan to be followed	Regulations require Diving Project Plan Plan to be followed
Guidelines	Guidelines Non-mandatory - only	Approved Code of Practice Special legal status

## 2.3 OFFENCES AND PENALTIES UNDER THE REGULATIONS

### 2.3.1 OFFENCES FOR NON-COMPLIANCE WITH PROVISIONS

- 2.3.1.1 The Dive Regulations create a number of mandatory requirements for Operators, Diving Contractors, Diving Supervisors and divers and other persons.

2.3.1.2 Failure to comply with these mandatory provisions is an offence under the Dive Regulations and subject to stipulated penalties.

## 2.3.2 TYPES OF OFFENCES

2.3.2.1 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.

2.3.2.1.1 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.

2.3.2.1.2 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.

## 2.3.3 PENALTIES

2.3.3.1 A number of offences are created under the regulations for either doing or failing to do something or things. The penalties are expressed as “penalty units”.

2.3.3.2 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.

2.3.3.3 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.

2.3.3.4 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.

2.3.3.5 The amount of a “penalty unit” is presently set of \$110. For these regulations, as of 2012, the maximum penalties in dollar terms are set at:

2.3.3.5.1 For offences committed by operators (100 penalty units) - \$11,000

2.3.3.5.2 For offences committed by diving contractors (50 penalty units) - \$5,500

2.3.3.5.3 For offences committed by diving supervisors (20 penalty units) - \$2,200

2.3.3.5.4 For offences committed by divers (10 penalty units) - \$1,100

## 2.4 WHERE DIVE REGULATIONS APPLY AND TO WHAT ACTIVITIES

---

2.4.1.1 These regulations apply in offshore Commonwealth waters and in designated coastal waters of Australian States and Territories. States and Territories have corresponding legislations, the *Petroleum (Submerged Lands) Act* (PSLA), where petroleum exploration, production or works require the use of divers.

2.4.1.2 They apply to activities which include:

2.4.1.2.1 air dives to a depth of 50 metres

- 2.4.1.2.2 mixed gas dives including those deeper than 50 metres where closed bell or saturation diving techniques are used
- 2.4.1.2.3 where diving takes place from vessels maintaining station by the use of dynamic positioning

## 2.5 SOME DEFINITIONS UNDER THE REGULATIONS

---

### 2.5.1 ADAS

*ADAS means the Australian Diver Accreditation Scheme administered by the Board of the Australian Diver Accreditation Scheme*

---

- 2.5.1.1 The Australian Diver Accreditation Scheme (ADAS) is a not-for-profit diver training and accreditation administered by the Board of ADAS on behalf of the Commonwealth Department of Industry, Tourism and Resources (DITR) on a cost-recovery basis.
- 2.5.1.2 ADAS offers accreditation to divers who can establish that they have been assessed by an ADAS Accredited Training Establishment (ATE) as meeting the competency requirements of the relevant ADAS/AS 2815 Part(s). 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 2299 medical certificate certifying him or her fit to dive.
- 2.5.1.3 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.

### 2.5.2 DIVING CONTRACTOR

*“Diving contractor” means a person who enters into a contract to conduct a diving operation*

---

- 2.5.2.1 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.

### 2.5.3 DIVING OPERATION

*“Diving operation” means an offshore petroleum operation or greenhouse gas storage operation consisting of one or more dives*

---

- 2.5.3.1 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.

### 2.5.4 DIVING PROJECT

*“Diving project” means an activity consisting of one or more diving operations*

---

- 2.5.4.1 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. "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.

## **2.5.5 DSMS**

*"DSMS" means a diving safety management system*

---

- 2.5.5.1 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.
- 2.5.5.2 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.
- 2.5.5.3 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.

## **2.5.6 FACILITY**

*"Facility" has the meaning given by Clause 3 of Schedule 3 of the Act*

---

- 2.5.6.1 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.

## **2.5.7 MANNED SUBMERSIBLE CRAFT**

*"Manned submersible craft" means 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*

---

- 2.5.7.1 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. Manned submersibles can be bottom-oriented human-powered or 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, self propelled or towed.

## **2.5.8 OPERATOR**

*"Operator" has the meaning given by Clause 3 of Schedule 3 to the Act*

---

- 2.5.8.1 The operator of a facility is the person/company who has been formally identified by the titleholder(s) of the field in writing to the Designated Authority 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.

- 2.5.8.2 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.
- 2.5.8.3 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.

## **2.5.9 PETROLEUM ACTIVITY**

*“Petroleum activity” means operations in an adjacent area carried out under a petroleum instrument, other authority or consent under the Act or regulations*

---

- 2.5.9.1 Petroleum activity includes the following operations:
- (a) *a seismic or other survey*
  - (b) *drilling*
  - (c) *construction and installation of a facility*
  - (d) *operation of a facility*
  - (e) *significant modification of a facility*
  - (f) *decommissioning, dismantling or removing a facility*
  - (g) *construction and installation of a pipeline*
  - (h) *operation of a pipeline*
  - (i) *significant modification of a pipeline*
  - (j) *decommissioning, dismantling or removing a pipeline*
  - (k) *storage, processing or transport of petroleum*
  - (l) *any other operation or work for which a petroleum instrument, other authority or consent is required under the Act or regulations*
- 2.5.9.2 The Regulations apply to any diving activities that occur in relation to any of the above operations.

## **2.6 GENERAL FEATURES OF REGULATIONS**

---

### **2.6.1 SAFETY AUTHORITY/REGULATOR**

- 2.6.1.1 The regulatory body responsible for all safety issues concerning offshore petroleum activities is the National Offshore Safety Authority (NOPSEMA).
- 2.6.1.2 NOPSEMA is a joint Commonwealth/State statutory authority and is empowered to regulate the safety of all offshore petroleum activities whether in state or Commonwealth waters.
- 2.6.1.3 Safety Inspectors (including an inspector with specific diving responsibilities) are appointed under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGSA)* with special powers to provide advice, carry out inspections, investigate accidents or breaches of the regulations, issue notices and mount prosecutions where appropriate.

## 2.6.2 REG 4.1 - MEANING OF DIVING

- 2.6.2.1 Under the Dive Regulations, someone is diving when they are undertaking diving in any normal sense of the word in order to undertake work of any kind subject to the provisions of the OPGGSA.
- 2.6.2.2 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.
- 2.6.2.2.1 Diving includes immersion whilst in a manned submersible craft (see definition above) and also whilst undertaking breath-hold diving whilst using a mask and/or snorkel and /or without any equipment at all.
- 2.6.2.3 **Note:** These regulations do not apply to breath-hold diving **used for environmental surveys**. Such surveys will not come under these Regulations unless they require the use of compressed breathing medium.
- 2.6.2.4 These regulations **do** apply to breath-hold diving used for **any other purpose** to undertake work of any kind subject to the provisions of the OPGGSA.

## 2.6.3 REG 4.2 - WHEN A DIVING OPERATION BEGINS AND ENDS

- 2.6.3.1 Under the Dive Regulations, a diving operation:
- 2.6.3.1.1 begins when the diver, or first diver, who takes part in the operation starts to prepare to dive; and
- 2.6.3.1.2 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; and includes the time taken for therapeutic recompression if necessary
- 2.6.3.2 Under the Dive Regulations, a 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.
- 2.6.3.3 Planning and procedures should also include the period involved in travel after diving - particularly where there maybe changes in ambient pressure (e.g., flying and road travel over mountain ranges).
- 2.6.3.3.1 The diving operation is only completed once that time period has expired.

## 2.6.4 REG 4.4 - CONTINUOUS IMPROVEMENT

- 2.6.4.1 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.
- 2.6.4.2 The DSMS must provide for continuous improvement so that risks to persons involved with a diving project are eliminated or reduced to ALARP.

## 2.7 INVOLVEMENT OF DIVERS AND EMPLOYEES

---

- 2.7.1.1 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.



- 2.7.1.2 Operational personnel must be encouraged to actively seek to identify potential and actual problems and to make suggestions for changes and/or improvements/additions to an organisation's policies, processes, practices or procedures.
- 2.7.1.3 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.
- 2.7.1.4 Employee involvement is a requirement of the Dive Regulations for the development of a DSMS and the diving project plan.
  - 2.7.1.4.1 For any Safety Management System 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.
  - 2.7.1.4.2 Systems prepared in isolation and devolved to employees are unlikely to be suitable for the workforce.
- 2.7.1.5 In regard to the preparation of the diving project plan, 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.
- 2.7.1.6 As an alternative to, or as well as, the purpose-specific employment of known staff to undertake the consultation process, the diving contractor may come to an arrangement with an employee representative body or union(s) to engage in the consultation process.
- 2.7.1.7 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:
  - 2.7.1.7.1 the employees consulted and their relevance to the DSMS
  - 2.7.1.7.2 details of any submissions or substantive comments relevant to the development of the DSMS made during the process; and
  - 2.7.1.7.3 any changes (including the addition of new material) made to the DSMS as a result of the consultation.

## **2.7.2 OPERATOR'S RESPONSIBILITIES**

- 2.7.2.1 The Operator has overall responsibility for the safe execution of projects associated with a facility and its safety case.
- 2.7.2.2 The Operator and diving contractor together have responsibility, under the Dive Regulations, for ensuring that a safe diving project is carried out.
- 2.7.2.3 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.
- 2.7.2.4 The operator may check on the currency status of the Diving Contractor's DSMS through A "Register of DSMS" maintained by NOPSEMA.
- 2.7.2.5 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.

## 3 NO DIVING WITHOUT A DSMS

### 3.1 REG 4.3 - CONTRACTOR MUST HAVE CURRENT AND ACCEPTED DSMS

---

- 3.1.1.1 All diving contractors who intend to undertake offshore diving work **MUST** have a DSMS that has been accepted by the regulator.
- 3.1.1.1.1 A DSMS is the fundamental prerequisite for a diving contractor to engage in diving activities subject to the OPGGSA. The DSMS must have been assessed by NOPSEMA and found to meet all the requirements of these Regulations and in general conform to the minimum standards of these Guidelines, and formally accepted in writing.
- 3.1.1.1.2 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.
- 3.1.1.2 The DSMS must also be current, i.e.:
- 3.1.1.2.1 must be an accurate representation of the policies, staffing, procedures and equipment that the diving contractor is currently using
- 3.1.1.2.2 it must be an up-to-date revision as per the provisions of Regulation 4.3(4) (i.e., it must not have been revised or withdrawn since its latest acceptance and it must not have been more than 5 years since its latest acceptance)
- 3.1.1.3 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.

### 3.2 GENERAL FEATURES OF A DSMS

---

#### 3.2.1 DSMS TO MEET REQUIREMENTS OF GUIDELINES

- 3.2.1.1 A DSMS must meet the minimum standards set out in the *Guidelines for Complying with the Petroleum (Submerged Lands)(Diving Safety) Regulations 2002 (the Guidelines)* published by NOPSEMA and as amended from time to time.
- 3.2.1.2 These Guidelines give comprehensive advice on formulating a DSMS. A guideline does not have the same legal force as a regulation, however, and the advice is not the only acceptable means of achieving a satisfactory standard. Non-compliance with a guideline is not sufficient reason of itself for prosecution under the Regulations.
- 3.2.1.3 If a diving contractor chooses to use a different formulation or approach in developing a DSMS to that outlined in these Guidelines, this will be acceptable as long as the DSMS demonstrates to the satisfaction of NOPSEMA that a similar or better standard of safety management will be achieved. The diving contractor will need to detail the reasons for adopting a different approach and demonstrate how adequate safety is achieved. If a different formulation is used, diving contractors should be aware that the assessment process may be more complex and therefore take longer than otherwise and should liaise with the regulator at an early stage of the process to minimise delays.

#### 3.2.2 REG 4.4(2)(A) - PROVIDE FOR ALL THE ACTIVITIES OF A DIVING PROJECT

- 3.2.2.1 A DSMS is a comprehensive document prepared by a diving contractor in conjunction with his employees or employee representatives.
- 3.2.2.1.1 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).

3.2.2.2 In preparing the DSMS, the diving contractor must ensure that it covers all the activities that occur in undertaking a diving project.

3.2.2.3 It should detail, and ensure the and 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.

### **3.2.3 REG 4.4(2)(B) - REQUIRE THE PREPARATION OF A DIVING PROJECT PLAN**

3.2.3.1 The diving project plan is the 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 and the DSMS. As such, its preparation requires consultation between the relevant operator, diving contractor and employees. It must ensure arrangements between the two 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.

### **3.2.4 REG 4.4(2)(C), (D) & (E) - PROVIDE FOR THE IDENTIFICATION, ASSESSMENT AND ELIMINATION OF HAZARDS**

3.2.4.1 The DSMS must also include information giving details of the DSMS elements that ensure hazards are identified and risks are continually and 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.

3.2.4.2 This provision requires that risks be eliminated or reduced to as low as reasonably practicable (ALARP).

3.2.4.3 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.

3.2.4.3.1 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.

### **3.2.5 REG 4.4(2)(F) - PROVIDE AN INSPECTION AND MAINTENANCE PROGRAM**

3.2.5.1 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 facilities and that these standards are implemented effectively.

### **3.2.6 REG 4.4(2)(G) - PROVIDE FOR EFFECTIVE COMMUNICATION INVOLVED IN A DIVING PROJECT**

3.2.6.1 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.

3.2.6.2 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

## **3.2.7 REG 4.4(2)(H) - ESTABLISH PERFORMANCE STANDARDS REQUIRED**

- 3.2.7.1 Performance standards are the basis of planning and measuring health and safety achievements - "what gets measured gets done" applies.
- 3.2.7.1.1 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.
  - 3.2.7.1.2 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.
- 3.2.7.2 The diving contractor must establish, maintain and monitor measurable and achievable health and safety objectives, plans and performance standards consistent with the company's health and safety policy.
- 3.2.7.3 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.

## **3.2.8 REG 4.4(2)(I) - SPECIFY A PROGRAM OF CONTINUOUS IMPROVEMENT**

- 3.2.8.1 The DSMS must provide for continuous improvement so that risks to persons involved with a diving project are eliminated or reduced to as low as reasonably practicable (ALARP).
- 3.2.8.2 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 etc will change. The DSMS will also need to change from the one originally accepted by NOPSEMA .
- 3.2.8.3 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.
- 3.2.8.3.1 Performance must be assessed by internal reference to key performance indicators and external comparison with local, national and international best practice.
- 3.2.8.4 The diving contractor must detail in the DSMS how the continuous improvement process will be managed throughout diving projects. This will involve the organisation at the least committing to:
- 3.2.8.4.1 establishing appropriate standards and procedures for the management of projects based on risk assessment and best practice standards for high risk training and assessment
  - 3.2.8.4.2 implementing plans to achieve objectives and standards
  - 3.2.8.4.3 measuring progress with achieving plans and compliance with standards
  - 3.2.8.4.4 reviewing against objectives and standards, identifying opportunities for improvement and taking appropriate improvement actions to feed back into the process
  - 3.2.8.4.5 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.

## **3.2.9 REG 4.4(3)(A) - SPECIFY STANDARDS OR CODES OF PRACTICE TO BE USED IN A DIVING PROJECT**

- 3.2.9.1 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.

- 3.2.9.2 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.
- 3.2.9.3 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 defence 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 provision requires that they be identified in the DSMS.
- 3.2.9.4 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.

### **3.2.10 REG 4.4(3)(B) - REQUIRE THAT DIVING BE CARRIED OUT ACCORDINGLY**

- 3.2.10.1 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.

### **3.2.11 REG 4.4(4)(A) - DEMONSTRATE THAT DIVE REGULATIONS COMPLIED WITH**

- 3.2.11.1 The DSMS must specify in adequate detail how all the matters specified in the Dive Regulations are complied with.

### **3.2.12 REG 4.4(4)(B) - CONTAIN A SYSTEM FOR THE MANAGEMENT OF CHANGE**

- 3.2.12.1 The diving contractor should ensure that changes and modifications are reviewed for hazards and risk prior to implementation and information on change requirements is communicated to all relevant employees and stakeholders. The DSMS must demonstrate that:
- 3.2.12.1.1 arrangements are in place for controlling modifications to plant, equipment, materials, practices and procedures used in the diving contractors operations
  - 3.2.12.1.2 arrangements are in place for controlling permanent and temporary organisational and work activity modifications and changes, and how this is communicated to relevant employees
  - 3.2.12.1.3 procedures are established, implemented and maintained for the control of all relevant safety and risk management documents, plans, drawings and data
  - 3.2.12.1.4 arrangements are in place for assessing health and safety implications when there is organisational or work activity changes.

## **3.3 REGULATION 4.10 - REVISION OF DSMS**

---

### **3.3.1 DSMS REQUIRED TO PROVIDE CURRENT AND ACCURATE RECORD OF DIVING PRACTICES**

- 3.3.1.1 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 of acceptance.

3.3.1.2 Regulation 4.10 mandates the different circumstances under which the DSMS must be revised.

### **3.3.2 REG 4.10(A) - IF DEVELOPMENTS MAKE IT APPROPRIATE TO DO SO**

3.3.2.1 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.

3.3.2.2 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.

### **3.3.3 REG 4.10(B) - IF CONTRACTOR PROPOSES TO MAKE SIGNIFICANT CHANGES**

3.3.3.1 As noted above, the DSMS is required 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 of acceptance.

3.3.3.2 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.

### **3.3.4 REG 4.10(C) - IF SAFETY AUTHORITY GIVES NOTICE UNDER REG 4.11**

3.3.4.1 Regulation 4.11 provides that the regulator 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.

### **3.3.5 REG 4.10(D) - IF THERE ARE CUMULATIVE MINOR CHANGES**

3.3.5.1 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 the regulator, it must be revised.

### **3.3.6 REG 4.10(E) - AT 5 YEARLY INTERVALS**

3.3.6.1 This requirement 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.

3.3.6.2 The five year period is to be calculated from the most recent date that it has been accepted by the DA – i.e., taking into account two possible circumstances:

3.3.6.2.1 if the DSMS has not, since the date when it was first accepted by the regulator, subsequently been revised, re-submitted and accepted by the regulator, from the date of its first acceptance

3.3.6.2.2 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

3.3.6.3 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.

## **4 DIVING PROJECT PLANS**

### **4.1 DIVING PROJECT PLAN**

---

#### **4.1.1 INTRODUCTION**

- 4.1.1.1 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 operator's 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.
- 4.1.1.2 The diving project plan 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.

#### **4.1.2 REG 4.17 - NO DIVING WITHOUT A DIVING PROJECT PLAN APPROVED BY THE OPERATOR**

- 4.1.2.1 All diving operations shall have a diving project plan prepared by the diving contractor.
- 4.1.2.2 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 diving project plan is to be revised, the operator must approve any proposed revision of the diving project plan.
- 4.1.2.3 If there is no operator the plan must be submitted to NOPSEMA for review. If the plan meets the requirements of the regulations the regulator will accept the plan. Diving may not commence unless the plan is approved by the operator or accepted by NOPSEMA.
- 4.1.2.4 The operator must provide a copy of the diving project plan to NOPSEMA if requested.

#### **4.1.3 REG 4.13 - IF NO OPERATOR, NOPSEMA TO APPROVE**

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

#### **4.1.4 REG 4.15 - DIVING PROJECT PLAN TO BE UPDATED**

- 4.1.4.1 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.
- 4.1.4.2 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 project plan.
- 4.1.4.3 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.
- 4.1.4.4 Where there is no operator for the project the updated project plan must be re-submitted to NOPSEMA.

#### **4.1.5 REG 4.16 - CONTENTS OF DIVING PROJECT PLAN**

- 4.1.5.1 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.

4.1.5.2 The scope of diving operations can be extensive. Projects can vary from relatively simple operations, such as removing a rope from a vessel propeller, to sub sea field installations. The scale and complexity of the plan will vary accordingly.

4.1.5.3 The Diving Project Plan should include:

4.1.5.3.1 The Acts, Regulations and Directions (Schedules) applicable to the area of operation.

- For example, legislation that would apply in the Commonwealth adjacent waters off Western Australia includes:
  - Commonwealth - Petroleum (Submerged Lands) Act 1982
  - Petroleum (Submerged Lands) (Management of Safety on Offshore Facilities) Regulations 2007
  - Petroleum (Submerged Lands) (Pipelines) Regulations 2007
  - Petroleum (Submerged Lands) (Diving Safety) Regulations 2007
  - Petroleum (Submerged Lands) (Occupational Safety & Health) Regulations 2007
  - Schedule of Specific Requirements as to Offshore Petroleum Exploration & Production 1995 (with amendments 1SL/96-7 and 2SL/96-7).

4.1.5.3.2 **A list of standards and codes of practice** that the diving contractor considers apply to the project

- Typically this would include standards and Guidelines identified in the contractor's DSMS and specific Guidelines or standards used in the project, such as AS/NZS 2299.1 1999 and IMCA Notes.

4.1.5.3.3 **Hazard identification** - 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:

- Physiological affects:
  - toxic effects of air or gas mixtures from nitrogen narcosis or oxygen toxicity;
  - 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 and bell-bounce techniques.
  - 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 - drill cuttings on the seabed, effluent contamination of the area or potential contamination with NORM (naturally occurring radioactive material) etc.
- Physical Environment:
  - diving in the vicinity of water-flow, intakes and discharges
  - restricted surface visibility
  - underwater currents
  - diving near remotely operated vehicle (ROV) operations
  - diving from dynamically positioned vessels.
- Procedural:
  - language barriers
  - familiarisation with procedures, equipment and project.
- Power Tools:
  - electricity



- high-pressure water jetting
- lift bags
- abrasive cutting discs
- oxy-arc cutting and burning operations.
- Breathing gases:
  - quantity of gases
  - quality of gases
  - levels of oxygen in helium and nitrogen
  - contents of gas mixes.
- Saturation diving:
  - lost closed bell contingency plan
  - hyperbaric Evacuation
  - length of diver's umbilical
  - transfer under pressure
  - duration of saturation exposure.
- Medical and physiological considerations:
  - liaison with a doctor
  - treatment of patients in a hyperbaric chamber
  - diver monitoring
  - adjacent noisy operations
  - seismic operations and sonar transmissions
  - decompression illness
  - altitude changes
  - thermal stress.

4.1.5.3.4 **A risk assessment** - based on this information, the diving project plan must state how those hazards identified and assessed risks will be controlled. The hazards should be recorded in the hazard register; The diving project plan may include a diving contractor's standard operating rules, including generic risk assessments. All documents should show date upon which they were prepared. The diving project plan 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. It should also include procedures for conducting reviews of the site and updating the specific risk assessments.

4.1.5.3.5 **A safety management plan** - if the overall plan for the management of safety is associated with the activity, it should detail how activity specific risks are managed to as low as reasonably practical.

4.1.5.3.6 **Job hazard analyses for the diving operation** - job hazard analyses (JHA) for the diving operations may be from generic JHAs or developed with the workforce in relation to specific diving operations for the activity.

4.1.5.3.7 **An emergency response plan** - 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 positions (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
- Demonstrate that all potential emergencies are identified and procedures and facilities exist for mitigating their effects. The demonstration should indicate:
  - the offshore command structure to manage the emergency response on the diving project
  - the onshore command structure to co-ordinate and support the emergency response on the diving project
  - the roles and responsibilities of all key employees associated with the execution of the emergency response plan
  - 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
  - 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
  - the procedures for issuing and maintenance of safety equipment, emergency equipment and specialised tools
  - the procedures in place for search, rescue and recovery operations
  - the availability of sufficient numbers of competent emergency trained response team personnel at all times
  - the procedures for accounting for all personnel on board in an emergency
  - a schedule of regular emergency drills and exercises are conducted for each emergency scenario.
- Demonstrate that all personnel are competent to perform their roles during an emergency. The diving contractor should:
  - establish procedures to assist employees who are exposed to critical incidents at work
  - indicate how the emergency command ability of the person-in-command of the diving project is assessed prior to appointment
  - establish the training provided and the methods of assessing competence for all key personnel
  - ensure that procedures are established for communicating emergency response arrangements to employees.
- Demonstrate that effective emergency response equipment is adequate. The diving contractor should demonstrate that:
  - 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
  - emergency equipment, exit signs and alarm systems are inspected, tested and maintained at regular intervals
  - the effectiveness of the emergency response system is periodically assessed, reviewed and improved.
- Provide for hyperbaric evacuation:

- 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.
  - 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.
  - where there is a contingency for the lifting of HRV (Hyperbaric Rescue Vessel) or a HLB (Hyperbaric Lifeboat) onto support vessels or platforms there must be an engineering assessment of the adequacy of the proposed lifting system and a risk assessment of the operation.
  - additional safety requirements may be necessary for those personnel conducting the evacuation.
  - Provide for simultaneous operations and emergency response
    - 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 operator's safety case and the DSMS. 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.
  - Detail the consultation with divers and other employees working on the project
    - Regulation 4.18 requires the involvement of divers and employees in the diving project plan. 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.
    - 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 with the competence and experience to review and provide relevant feedback on the system.
    - in regard to the preparation of the Diving Project Plan, 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.
- 4.1.5.4 The diving project plan must describe each diving operation that is part of the diving project and all planned diving operations shall be identified in the project plan.
- 4.1.5.5 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.
- 4.1.5.6 The diving project plan must provide for adequate communications between persons undertaking the project and any relevant:
- other relevant contractors; and
  - facility; and
  - vessel or aircraft; and

- on-shore installation

4.1.5.7 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.

## **5 INVOLVEMENT OF DIVERS AND EMPLOYEES**

### **5.1 CONSULTATION WITH DIVERS ETC MANDATORY**

---

#### **5.1.1 INTRODUCTION**

- 5.1.1.1 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. Operational personnel must be actively encouraged to forward suggestions for changes and/or improvements/additions to processes, practices or procedures.
- 5.1.1.2 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.

#### **5.1.2 REG 4.18(1) - INVOLVEMENT OF DIVERS AND EMPLOYEES IN DSMS AND DIVING PROJECT PLAN**

- 5.1.2.1 As noted previously, employee involvement is a requirement of these Regulations for the development of a DSMS. For any Safety Management System 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.
- 5.1.2.2 In regard to the preparation of the diving project plan, 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.
- 5.1.2.3 As an alternative to, or as well as, the purpose-specific employment of known staff to undertake the consultation process, the diving contractor may come to an arrangement with an employee representative body or union(s) to engage in the consultation process.

#### **5.1.3 REG 4.18(2) - DETAILS OF CONSULTATION TO BE PROVIDED IN WRITING**

- 5.1.3.1 The Operator must ensure that there was in fact effective consultation with employees in development of the diving project plan.
- 5.1.3.2 When submitting a DSMS to the regulator for acceptance, the diving contractor must set out in writing details of the consultation that has taken place, including:
  - 5.1.3.2.1 submissions or comments made during the consultation; and
  - 5.1.3.2.2 changes that have been made to the DSMS as a result of the consultation
- 5.1.3.3 This requirement is a reflection of the seriousness of these Regulations in regard to the employee 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:
  - 5.1.3.3.1 the employees consulted and their relevance to the DSMS
  - 5.1.3.3.2 details of any submissions or substantive comments relevant to the development of the DSMS made during the process; and

- 5.1.3.3.3 any changes (including the addition of new material) made to the DSMS as a result of the consultation.

## **5.1.4 REG 4.7 - LACK OF CONSULTATION GROUNDS FOR REJECTION OF DSMS**

- 5.1.4.1 Regulation 4.18 requires that the diving contractor ensure that there is effective consultation with relevant divers and other employees.
- 5.1.4.2 In submitting the DSMS for assessment, the diving contractor must set out in writing details of the consultation that has taken place.
- 5.1.4.3 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 requires that NOPSEMA must reject the DSMS.
- 5.1.4.4 This requirement further reflects the seriousness of these Regulations in regard to the employee consultation process.

## **6 SAFETY RESPONSIBILITIES**

### **6.1 REGULATION 4.19 - SAFETY RESPONSIBILITIES OF DIVING CONTRACTORS**

---

#### **6.1.1 CONTRACTOR'S GENERAL RESPONSIBILITIES**

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

- 6.1.1.1.1 the diving project is properly and safely managed
- 6.1.1.1.2 risk assessments have been carried out and the results recorded
- 6.1.1.1.3 the place from which the diving is to be carried out is suitable and safe
- 6.1.1.1.4 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 Diving Project Plans)
- 6.1.1.1.5 the supervisor and dive team are fully briefed on the project and aware of the contents of the diving project plan
- 6.1.1.1.6 there are sufficient personnel in the dive team to enable the diving project to be carried out safely. For example where the project risk assessment allows 2 divers to work in the water together and they are acting as standby diver for one another working, then they must be in visual contact with each other. There should also be a nominated and available standby diver on the surface
- 6.1.1.1.7 the personnel are qualified and competent
- 6.1.1.1.8 supervisors are appointed in writing and the extent of their control fully documented
- 6.1.1.1.9 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
- 6.1.1.1.10 adequate arrangements exist for first aid and medical treatment
- 6.1.1.1.11 suitable and sufficient plant is provided and that it is correctly certified and maintained
- 6.1.1.1.12 the divers are medically fit to dive
- 6.1.1.1.13 diving project records are kept containing the required details of the diving
- 6.1.1.1.14 there is a clear reporting and responsibility structure laid down in writing; and
- 6.1.1.1.15 all other relevant Regulations are complied with.

#### **6.1.2 DETAIL OF CONTRACTOR'S RESPONSIBILITIES**

6.1.2.1 Diving Plant and Equipment

6.1.2.1.1 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.

6.1.2.1.2 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.

## 6.1.2.2 Deck Chambers

6.1.2.2.1 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 2 metres.

6.1.2.2.2 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.

6.1.2.2.3 Can the chamber be used for the task for which it is intended? Could first aid, including CPR be performed in the chamber?

6.1.2.2.4 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.

6.1.2.2.5 Chambers should be equipped with environmental monitoring and control suitable for the intended purpose.

## 6.1.2.3 Gases

6.1.2.3.1 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.

## 6.1.2.4 Storage Cylinders

6.1.2.4.1 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.

## 6.1.2.5 Marking and Colour-coding of Gas Storage

6.1.2.5.1 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.

## 6.1.2.6 Divers' Breathing Gas Supply Systems

6.1.2.6.1 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.



6.1.2.6.2 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.

6.1.2.6.3 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.

## 6.1.2.7 Emergency Breathing Gas Cylinders

6.1.2.7.1 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.

## 6.1.2.8 Oxygen

6.1.2.8.1 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.

6.1.2.8.2 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.

## 6.1.2.9 Communications

6.1.2.9.1 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.

6.1.2.9.2 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.

## 6.1.2.10 Closed Diving Bells

6.1.2.10.1 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.

6.1.2.10.2 The bell requires:

- doors that can be opened from either side and act as pressure seals
- 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
- adequate equipment, including reserve facilities, to supply an appropriate breathing mixture to divers in and working from the bell
- equipment to light and heat the bell
- adequate life support system for the number of occupants

- communications should include hard wired communications, call button, sound powered and through water communications for emergencies
- adequate first-aid equipment, and lifting plant, to enable a person in the bell to lift an unconscious or injured diver into the bell
- 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.

## 6.1.2.11 Breathing Mixture Supply

- 6.1.2.11.1 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.

## 6.1.2.12 Emergency Recovery

- 6.1.2.12.1 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.
- 6.1.2.12.2 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.
- 6.1.2.12.3 The bell should be capable of sustaining the lives of trapped divers for at least 24 hours.
- 6.1.2.12.4 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.

## 6.1.2.13 Emergency Markings on Hyperbaric Rescue Systems

- 6.1.2.13.1 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.

## 6.1.2.14 Medical Equipment

- 6.1.2.14.1 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.
- 6.1.2.14.2 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.

## 6.1.2.15 Lifting Plant to Carry Personnel

- 6.1.2.15.1 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.

6.1.2.15.2 Part VII - Cranes, Winches and Lifts and Part VIII Diving of the Schedule of Specific Requirements as to Offshore Exploration and Production 1995 may provide useful guidance (see note on winches below).

## 6.1.2.16 Winches

6.1.2.16.1 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.

6.1.2.16.2 Brakes should operate directly on the drum not through a gear box.

6.1.2.16.3 **Note:** Winch failures in cranes rated for man-riding operations have occurred recently in WA.

6.1.2.16.4 Winches should be governed so that they cannot overload the basket, or lifting frame.

6.1.2.16.5 Winches should not be fitted with a pawl and ratchet gear where the pawl has to be disengaged before lowering.

## 6.1.2.17 Diving Baskets and Open-bottom Bells

6.1.2.17.1 A basket or open-bottom bell, used in support of surface-supplied diving, should be able to carry at least two divers in an un-cramped 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.

6.1.2.17.2 Secondary means of recovering the divers should be provided.

## 6.1.2.18 Medical and Equipment Locks and Diving Bell Trunking

6.1.2.18.1 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.

## 6.1.2.19 Therapeutic Recompression

6.1.2.19.1 A two-person two-compartment chamber at the worksite to provide suitable therapeutic recompression treatment should be provided for all diving projects.

## 6.1.2.20 Maintenance of Plant and Equipment

6.1.2.20.1 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.

## 6.1.2.21 Planned Maintenance System

6.1.2.21.1 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.

6.1.2.21.2 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.

6.1.2.21.3 The operator should establish that the diving contractor has maintenance systems that are functional and implemented.

## 6.1.2.22 Periodic Examination, Testing and Certification

6.1.2.22.1 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.

## 6.1.2.23 Pre-dive Visual Inspection

6.1.2.23.1 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.

## 6.1.2.24 Cylinders Used Under Water

6.1.2.24.1 Divers' emergency gas supply cylinders and other cylinders used under water can suffer from accelerated corrosion and must be regularly examined and maintained.

## 6.1.2.25 Diving Bell and Basket Lift Wires

6.1.2.25.1 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.

## 6.1.3 DIVING CONTRACTOR TO ENSURE DSMS COMPLIED WITH

6.1.3.1 This regulation requires that the 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.

6.1.3.2 Standards and generic procedures nominated or referenced in the DSMS must 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.

6.1.3.3 The offence created by this regulation is of strict liability. The prosecutor only has to prove that diving was undertaken and that it was not in compliance with the accepted DSMS. There is no requirement to prove that the diving contractor intended to commit an offence.

## 6.2 SAFETY IN THE DIVING AREA

---

### 6.2.1 REG 4.20(1) - COPIES OF THE FOLLOWING DOCUMENTS TO BE AVAILABLE AT THE DIVE SITE

- the letter of appointment for each diving supervisor
- the current and accepted diving contractor's DSMS

- the diving project plan approved by the operator or NOPSEMA as appropriate.

## 6.2.2 REG 4.20(2) - PERSONS TO COMPLY WITH REASONABLE INSTRUCTIONS

6.2.2.1 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:

6.2.2.1.1 unnecessary personnel to leave a control area

6.2.2.1.2 personnel (nominated in the plan) to operate plant and so on.

6.2.2.2 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.

6.2.2.3 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.

## 6.2.3 REG 4.21 - NO SURFACE-ORIENTED DIVING BELOW 50 METRES

6.2.3.1 The operator cannot approve a diving project plan where surface supplied diving is planned to a depth deeper than 50 metres.

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

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

6.2.3.4 **Note:** Section 10.3 of the Criminal Guideline provides a defence of sudden or extraordinary emergency.

6.2.3.4.1 It is therefore a defence 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.

## 6.2.4 REG 4.21(3) & (4) - DIVING DEEPER THAN 50 METRES

6.2.4.1 The operator and/or a diving contractor must ensure that operational dives beyond a depth of 50 metres are planned for:

6.2.4.1.1 using a closed diving bell and a suitable mixed gas breathing medium; or

6.2.4.1.2 a manned submersible craft.

6.2.4.2 The breathing medium must contain 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.

6.2.4.3 It is a defence 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.

6.2.4.4 This section does not apply to therapeutic recompression.

## 7 START-UP NOTICE

### 7.1 REG 4.24(2) - NO DIVING WITHOUT NOTIFICATION OF NOPSEMA

---

#### 7.1.1 OPERATOR TO GIVE NOPSEMA A START-UP NOTICE

- 7.1.1.1 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.
- 7.1.1.2 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.
- 7.1.1.3 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.
- 7.1.1.4 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.
- 7.1.1.5 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.
- 7.1.1.6 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 diving project plan. 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.
- 7.1.1.7 Diving must not commence until a start-up notice has been given to NOPSEMA.
- 7.1.1.8 Failure to comply with this Regulation is an offence and may result in a penalty of up to 100 penalty units.

#### 7.1.2 REG 4.24(3) - IF NO OPERATOR FOR A DIVING PROJECT

- 7.1.2.1 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. Under these circumstances, the diving contractor has the responsibility to notify NOPSEMA.
- 7.1.2.2 Diving must not commence until a start-up notice has been given to NOPSEMA.
- 7.1.2.3 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.
- 7.1.2.4 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.
- 7.1.2.5 Failure to comply with this Regulation is an offence and may result in a penalty of up to 50 penalty units.

## 8 DIVING OPERATIONS

### 8.1 REG 4.25 - DIVERS IN DIVING OPERATIONS

---

#### 8.1.1 REG 4.25(1) & (2) - DIVERS MUST BE COMPETENT

- 8.1.1.1 The diving contractor and/or the 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
- 8.1.1.2 “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.
- 8.1.1.3 This provision is consistent with the general requirement of workplace 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.
  - 8.1.1.3.1 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 safety carry out the particular task to be conducted during the operation.
- 8.1.1.4 This provision 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.
  - 8.1.1.4.1 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.

#### 8.1.2 REG 4.25(1) & (2) - DIVERS TO BE ADAS CERTIFIED

- 8.1.2.1 A diving contractor and/or the 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
- 8.1.2.2 The ADAS certification must be appropriate to:
  - 8.1.2.2.1 any activity the diver may reasonably expect to carry out while taking part in the diving project
  - 8.1.2.2.2 the objectives of the diving project
  - 8.1.2.2.3 the required diving technique
  - 8.1.2.2.4 the level of competence required to undertake the assigned duty
  - 8.1.2.2.5 the findings of the risk assessment; and
- 8.1.2.3 Any restriction and/or limitation stated on a particular diving qualification certificate, such as diving technique; type of equipment; breathing gases; and maximum depth, must be strictly complied with.

## **8.1.3 REG 4.25 (5) & (6) - DIVERS MUST HAVE VALID MEDICAL CERTIFICATE**

- 8.1.3.1 A diving contractor and/or 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 stating the diver's fitness to perform work underwater.
- 8.1.3.2 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 advice from the diving contractor or the company's medical adviser if there is doubt about that person's fitness to dive.
- 8.1.3.3 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.
- 8.1.3.4 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.

## **8.1.4 REG 4.26 - VALID MEDICAL CERTIFICATES**

- 8.1.4.1 A diver's medical certificate is valid if the medical examination was based on the Diving Medical Examination Form (Appendix N of AS/NZS 2299). This can be satisfied if the examination was to a similar standard and format of that described in AS/NZS 2299.
- 8.1.4.2 In addition, 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.
- 8.1.4.3 The medical practitioner who completed the medical examination and completed the certificate must meet the requirements outlined under Reg 4.26 (2) (c).
- 8.1.4.4 The certificate of medical fitness to dive, stating the diver's fitness to perform work underwater, was not issued more than 12 months before the date of the dive.
- 8.1.4.5 The medical practitioner who gave it is accredited by the South Pacific Underwater Medicine Society (SPUMS); the Health and Safety Executive (HSE) of the United Kingdom; or the Underwater Hyperbaric Medicine Society; or has completed an appropriate course of training conducted by the Royal Australian Navy or the Royal Adelaide Hospital; or has been approved under the Australian Diver Accreditation Scheme
- 8.1.4.6 Occupational diving medical certificates issued by medical practitioners registered with the UK HSE for the purposes of completing occupational diving medical examinations are acceptable.
- 8.1.4.7 Medical examinations for recreational SCUBA diving are unacceptable.

## **8.1.5 REG 4.26(7) - PERSONS EXEMPTED FROM REQUIRING MEDICAL CERTIFICATE**

- 8.1.5.1 The requirement under this regulation to have a valid medical certificate does not apply to:
  - 8.1.5.1.1 Persons undertaking underwater operations inside a manned submersible craft where the pressure is at one atmosphere do not require a diving medical certificate, although they may be required to conform to other medical standards as applied by the operator etc.
  - 8.1.5.1.2 Persons undertaking diving in a recompression chamber if the diving is being undertaken solely for the purpose of providing medical care to an injured person. This is in recognition of the defence provided by Section 13 of the Criminal Code of sudden or extraordinary emergency.



## 9 RECORDS

### 9.1 DIVING OPERATIONS RECORD

---

#### 9.1.1 REG 4.27 - DIVING OPERATIONS RECORD

9.1.1.1 It is a legal duty of every diving supervisor subject to these Regulations to ensure that a record of every diving operation supervised by that person is kept in the form detailed in the Regulations. Once this document contains information relevant to a diving operation it becomes a legal document and can be referred as evidence of what did or did not happen during a particular operation. To that end, diving supervisors must ensure that the record is a true and correct and comprehensive account of the operation. (See Clause 1.4.5 for more detail).

#### 9.1.2 DIVER'S RECORD OF DIVING

#### 9.1.3 REG 4.28 - DIVER'S LOG BOOK

9.1.3.1 Every diver who dives in diving operations subject to these Regulations must possess a diver's log book to ensure that a detailed permanent record of every diving operation undertaken by the diver is kept in the form detailed in the Regulations.

9.1.3.2 It is the legal duty of every diver under these Regulations, and 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.

9.1.3.3 To that end, 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.

9.1.3.4 A diver must keep a record (written in ink) in his or her log book containing the details required in Reg 4.28(3) for every dive undertaken by the diver.

9.1.3.4.1 The diver must signify 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.

9.1.3.4.2 The logbook must be kept by the diver for at least seven (7) years after the last entry in case there is any necessity to subsequently refer to this information for medical or legal reasons.

9.1.3.5 The diving logbook must be a detailed permanent record of every diving operation undertaken by a diver.

9.1.3.5.1 It must be kept in a hard bound (i.e. pages are not loose leaf) record book with the pages numbered serially

9.1.3.5.2 It must be clearly identify the person to whom the diving details in the record refer; and

9.1.3.5.3 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.

9.1.3.6 A diver's log book is a legal record of the details of every dive undertaken by the diver.

9.1.3.6.1 The diver must have it available at all times during a diving operation for production to an inspector under appointed under the OPGGSA whenever required

- 9.1.3.6.2 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.

## **9.1.4 REG 4.28(3) – DIVER LOGBOOK ENTRIES**

- 9.1.4.1 The diver must keep a record accurately containing all of the following information for each dive undertaken:

- 9.1.4.1.1 date to which the entry relates
- 9.1.4.1.2 the location of the dive (and, if the dive was from a ship or installation, the name of the ship or installation)
- 9.1.4.1.3 the maximum depth reached
- 9.1.4.1.4 the times at which the diver left the surface, reached the bottom, left the bottom and arrived at the surface again, and bottom time
- 9.1.4.1.5 the breathing apparatus and breathing mixture used
- 9.1.4.1.6 the decompression schedule followed
- 9.1.4.1.7 the work done and the plant and tools used
- 9.1.4.1.8 any decompression illness, barotrauma, discomfort or injury and details of any treatment given
- 9.1.4.1.9 details of any emergency or incident
- 9.1.4.1.10 anything else relevant to the diver's health or safety.