

NOSAC
Diving Subcommittee
46 CFR 197 Sub Part B
General Revision Recommendations
April 18, 2008

Introduction

On April 16, 2007 the Diving Sub-Committee of NOSAC was requested to review and present recommendations with respect to 46 CFR 197, Sub Part B, Commercial Diving Operators paying special attention to the USCG Headquarters proposed Draft Revision. These regulations were written in 1977 with this being the first formal review by NOSAC. This review was performed by industry professionals experienced in diving operations as well as routine offshore oil industry practice. These recommendations represent large and independent oil producers, diving contractors, and diving trade organizations such as ADCI (Association of Diving Contractors International) and IMCA (International Marine Contractors Association) with work operations in the Gulf of Mexico as well as other OCS areas.

General Comments and Recommendations

As a forward to specific notation and recommendations, the diving sub-committee offers the following general observations:

- 46 CFR 197 Sub Part B was developed in 1977 with industry but current Recommended Practices such as those presented by IMCA and ADCI, representing companies actively involved in diving operations and safety have progressed well beyond this initial input for the writing of the regulation. These RP's should be considered in the development of revised regulations. However, 46 CFR 197 Subpart B should remain the standard for the OCS as a USCG developed document.
- Innovation in diving safety is paramount especially from a pro-active standpoint as opposed to a reactive one. However, being overly prescriptive in the regulatory standard will suppress this innovation and could work to the detriment of diving safety.
- Drug usage, either legal or illegal, and the overall testing of individual use have a wide variance of acceptance and compliance either by company or lawful standards. The Department of Transportation has already successfully implemented standards that have been accepted by various industries as a working minimum standard for use and testing. This standard should be seriously considered with respect to addressing Drug/Alcohol usage in this rewrite.

- Clarity in defining commercial versus recreational diving in offshore operations should be enhanced. Determination as to when recreational diving has evolved into commercial diving should be developed.
- Diving operations have become more specialized in today's offshore environment. Mixed gas and saturation diving safety are distinctly different as well as diving from dynamically positioned versus moored/live boating vessels. Each operation should be reviewed individually as opposed to being recognized as a different level of operations.
- Audits would be of great benefit but they should be developed, implemented, and performed by industry in order to ensure full considerations of the operation in that geographical area.
- Training and its frequency should not be limited to just experience or classroom instruction but a balanced combination of both as prescribed by Industry Recommended Practices.
- It is recommended that SCUBA not be recognized as an Offshore Commercial Diving application.
- Bell diving should be clarified to reflect "Wet Bell" Diving where referenced.
- This cooperative effort between the USCG and Industry should not be concluded with the presentation of these recommendations by NOSAC.

Conclusion

As noted above, this recommendation should not be the end of the cooperative effort to revise 46 CFR 197 Subpart B between USCG and Industry. Since 1977, offshore commercial diving operations have changed dramatically. Efforts to conform more to current recommended procedures and operations as they are reviewed and presented by organizations like ADCI and IMCA on behalf of industry should be seriously considered. Specific recommendations by this NOSAC subcommittee have been attached to this General Recommendation with respect to USCG recommended changes but should be reviewed again by a task force led by the Coast Guard with Industry to insure that regulations are tailored to the newer shelf and deep water diving operations as they exist today and as they are evolving world wide. It is imperative, however, that these efforts be focused on the OCS with the major emphasis on the Gulf of Mexico and its geographical working environment.

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 (June 12, 2007 USCG Draft)

		Recommended as Worded			Remove Modify Add			Comments
General								
Provision	Purpose of Subpart.	X						
200 Existing	Employer and Individual Duties.	X						
201 Added	Applicability.	X						
202 Existing	Right of Appeal.	X						
203 Existing	Definitions.	X						
204 Existing	Compliance.				X		X	See Footnote 1
205 Added	Coast Guard Recognized Consensus Standards.				X			
206 Added	Availability of Standards.	X						
207 Added								
208 Added	Verification of Compliance.			X				It is recognized that auditing of Diving Contractor compliance should be a requirement addressed in the new standards, however it is the consensus of the NOSAC diving committee that auditing of Diving Contractor's to ensure they are in compliance with the new USCG regulations should be left to qualified auditors that are already doing compliance auditing on a world wide basis and that there isn't a need to create a verification industry as one already exists. Other than stating, what are the minimum qualifications for various levels of auditing, as in 192.210, the format as set out in technical trade organizations as Recommended Practices can provide the basic structure for defining a person qualified to audit compliance with the USCG Standards. It should also be noted that any effort to include auditing in this standard should be a part of an Appendix and not part of the standard itself.
209 Added	Third Party Organizations.			X				
210 Added	Qualification of Auditors.			X				
211 Added	Addition and Removal of Auditors.			X				
212 Added	Renewal of Third Party Organization Approval.			X				
213 Added	Suspension of Approval.			X				Other elements of auditing should be covered in a requirement for all Contractor's to have a Safety Management System (SMS) in place which outlines all the required audits and describes how the Contractor will address all safety requirements for diving safety and all auditing requirements could be the introductory chapter of their Diving Safety Manual.
214 Added	Withdrawal of Approval.			X				
215 Added	Appeals of Suspension or Withdrawal of Approval.			X				
216 Existing	Subst. for Required Equip., Materials, Apparatus, etc.						X	Omit Para. (b), renumber (c) to (b), and omit "and a Coast Guard Recognized Standard (CGRS)" in (d).
217 Existing	Designation of Person-in-Charge.	X						
218 Existing	Designation of Diving Supervisor.						X	Add "by the diving contractor" in (a) and after "person-in-charge" add "as defined above"
Personnel Physical Standards								
Provision	Applicability.	X						
250 Added	General.	X						
251 Added	Periodic Medical Examinations.						X	Omit the word "initial" in (b).
252 Added	Disqualifying Conditions.						X	Completely rewrite after USCG/Industry review
253 Added	Employee Cert. and Employer Verification.						X	Add "Medical" to Certification and Verification. Omit "Employer"
254 Added								
Personnel Qualifications								
Provision	Applicability.							
300 Added	General Requirements.	X						Omit (b) and (c). Who determines "lacking"? See Footnote 2
301 Added	Tender/Scuba Diver.						X	
302 Added							X	

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		Recommended as Worded	Remove	Modify	Add	Comments
303	Added	Surface-Supplied Air Diver.			X	Omit "undertake a minimum of 24 hours of" and "and conduct not less than twelve dives of which at least six are surface-supplied air". Modify to read "shall participate in a continuing education of documented training or instruction on topics relevant to their employment".
304	Added	Surface-Supplied Mixed-Gas Diver.			X	Omit "undertake a minimum of 24 hours of" and "and conduct not less than twelve dives of which at least six are surface-supplied mixed-gas". Modify to read "shall participate in a continuing education of documented training or instruction on topics relevant to their employment".
305	Added	Diving Bell/Saturation Diver.			X	Omit "undertake a minimum of 24 hours of" and "and conduct not less than twelve dives of which at least three are diving bell or saturation". Modify to read "shall participate in a continuing education of documented training or instruction on topics relevant to their employment".
306	Added	Diving Supervisor.			X	Replace (a), (b), (c), and (d) (iii) with "Annually each individual employed as a Diving Supervisor - Surface-Supplied Air Diving - Surface-Supplied Mixed-Gas Diving Supervisor - Bell/Saturation Diving Supervisor, regardless of date of initial employment in the industry, shall participate in a continuing education of documented training or instruction on topics relevant to their employment".
307	Added	Life Support Technician			X	Replace (a) (iii) with "Annually each individual employed as a Life Support Technician, regardless of date of initial employment in the industry, shall participate in a continuing education of documented training or instruction on topics relevant to their employment".
Equipment						
Provision						
350 Was 300		Applicability.	X			
351 Added		General				Omit (b), (d), (e), (f), (h), (i), (j), (k-all), (l), and (m-all)
360 Was 310		Air Compressor System.	X			Omit (c), already included in 456
362 Was 312		Breathing Supply Hoses.			X	In (c) omit "mixed-gas dives"
364 Was 314		First Aid and Treatment Equipment.	X			
368 Was 318		Gages and Timekeeping Devices.				
370 Was 320		Diving Ladder and Stage.			X	In (a) (1) end statement after "outfitted divers". In (b) (1) end statement after "fully outfitted divers".
372 Was 322		Surface-Supplied Helmets and Masks.				Omit (b) (4) (ii)
374 Was 324		Diver's Safety Harness.	X			
376 Was 326		Oxygen Safety.			X	Add " (3) A designated attachment point"
378 Was 328		PVHO - General.			X	In (a) add "and cleaned" after "designed".
					X	Replace in (d) (14) "25%" with "23%". Replace in (d) (15) "2" with "1"
380 Was 330		PVHO - Closed Bells.				
382 Was 332		PVHO - Decompression Chambers.			X	Add under (a) "Maintain and monitor safe bell atmosphere". Under (a) (6) add "have an emergency tapping code located inside, and outside the bell as well as the divers station".
384 Was 334		Open Diving Bells.			X	In (m) replace "a" with "has" a sound-powered
386 Was 336		Pressure Piping.			X	Omit (2)
388 Was 338		Compressed Gas Cylinders.			X	Under (a) add "and ASME Code"
390 Was 340		Breathing Gas Supply.				
392 Was 342		Buoyancy-changing devices.			X	Change (h) (ii) to "10" ppm CO ₂
394 Was 344		Inflatable Floatation Devices.			X	
396 Was 346		Diver's Equipment.				Remove (a); remove (b)
398 Added		Welding and Burning Equipment				Rename to "Underwater Water and Burning Operation"; delete (a), (c), (d), (e), (f), (g), and (h)
399 Added		High Pressure Water Blasting Equipment				Rename to "Underwater High Pressure Water Blasting Operation"; delete (a), (c), (d), (e), (f), (g), and (h)

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Operations Provision	Recommended as Worded	Remove Modify Add		Comments
		Remove	Modify Add	
400 Existing				
402 Existing	X		X	Remove (c)
404 Existing			X	In (b), replace "...utilize Operation Risk Management (ORM) incorporating hazard identification, hazard assessment, making of risk decisions, control implementation and supervision" with "...insure that a SMS is in place, reviewed, and being implemented with respect to the proposed operation."
410 Existing			X	Modify (iv) to include "Emergency equipment should be available and in good working order." Remove , except that SCUBA divers shall maintain their own profiles". (h) should be replaced with "A single Bell Diving minimum team size is 12, supporting two bell divers on one bell run and the appropriate chamber operation for the safe running of the operation and will include a bell diving supervisor, appropriate life support personnel, technicians, standby divers and tenders."
420 Existing	X			Add to (a) "Manning levels and working hours for all diving projects should be based on a review of each project by Contractor and Client and be consistent with existing Labor law standards." (e) should be revised to include consideration of a depth limit and the task specifics if the dive team only has 3 members. (f) should be modified from "130" FSW to "100" FSW. This topic should be addressed in the Contractor's Diving (Safety) Manual.
421 Existing			X	Add "(a) Contractor shall develop emergency procedures specific for each type of diving done by the company." Renumber section. Additional emphasis should be made for periodic drills to include the recovery of an injured or unconscious diver and deployment of the HRC for companies engaged in saturation diving operations. This topic should be addressed in the Contractor's Diving (Safety) Manual. Refer to DOT
425 Existing			X	
427 Existing		X		
Specific Diving Mode Procedures				
430 Existing			X	Recommended that SCUBA not be recognized as an Offshore Commercial Diving operation.
432 Existing			X	Remove in (4) , except when the diver is using a heavy weight diving outfit or is diving in a physically confining space"
434 Existing			X	MAJOR REWRITE NEEDED with Industry input. Lack of clarity due to modern operations.
436 Existing			X	In (c) (1) replace "220" with "170". Period after "decompression", remove "times greater than 120 minutes; and"
438 Added			X	See Attachment 1
Periodic Tests and Inspections of Diving Equipment				
450 Existing			X	
452 Existing			X	
454 Existing			X	
456 Existing			X	
458 Existing			X	
460 Existing			X	
462 Existing			X	
			X	In (a) (1), change "24" to "12".

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Records Provision	Recommended			Comments
	as Worded	Remove	Modify Add	
480 Existing	X			
482 Existing			X	
483 Added	X			
484 Existing	X			
486 Existing	X			
488 Existing	X			
490 Added	X			
(was noted as 483 also)				
Logbooks.				
Logbook Entries.				
Termination of Site Diving Activity Following a Casualty.				
Notice of Casualty.				
Written Report of Casualty.				
Retention of Records after Casualty.				
Retention of Equipment after Casualty.				
				In (b) (9), change "130" to "100"

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Footnotes

¹ - Add a definition for recreational diver for clarity purposes

- Omit definitions for CPR Training, Dangerous drug, drug, Fails a chemical test for Dangerous drugs, High Pressure Compressor, Injurious corrosion, Law enforcement officer, Low Pressure Compressor, Medical Review Officer (MRO), Pressure vessel, and Senior Company Official.

- Modify "Decompression sickness" to add the term "Baro-Trauma" to the definition as a description of decompression.

- Modify "PVHO" to read "means pressure vessel for human occupancy."

- Add "LST (Life Support Technician) - employed to primarily control and constantly monitor the hyperbaric environment and system in which divers live while saturation diving."

- Modify "Surface-supplied air diving" to exclude "including oxygen or oxygen enriched air if supplied for treatment."

- Modify "Umbilical" to read "... that supplies the diver or bell with a strength member, breathing medium, communications, power, and heat as appropriate to the diving mode or conditions."

² - Replace "a Tender/Scuba" with "an entry level Tender/Diver"

- Add ":", after "minimum training". Omit "at an accredited school, company training program, or U.S. military diving training facility:"

- Omit "(ii)" and "(iv)"

- Replace "Diseases, Injuries, and Psychological Aspects" with "Medicine and Physiology"

- Omit "and Cardio-Pulmonary Resuscitation (CPR)" in (vii). CPR is currently a part of First Aid but technique is constantly changing.

- Replace "and Associated Equipment" with "Operations" in (x).

- Omit "Scuba" in (xi) and (xii).

ATTACHMENT 1

§ 197.438 Dynamic Positioned (DP) Vessel Diving Operations

(a) During DP operations, the person-in-charge shall insure that—

(1) Diving is not conducted in shallow depths, proximity to other vessel/rigs or seas that impede station-keeping ability of the vessel with no single thruster operating at more than 80 percent power;

(2) All diving and vessel operations shall be performed to best industry practices. (See ADCI, IMCA documents)

(3) DP will have three data sources for station keeping from at least two different sources.

(a) DP data sources should not be blocked by any orientation of the vessel.

(b) Vessel DP system should be a Class 2 or better.

(4) Two sources of communication between the vessel bridge/DP station and dive control, with minimum communication of at least the following:

(a) Intention to move vessel.

(b) Any change in operational status.

(c) Any forecast or actual significant changes in weather.

(d) Ship movements in vicinity. (landing helicopters included)

(e) Intention to handle down-lines of any description.

(f) Major deck operations (lifting)

(g) Start and stopping of dive operations

(5) DP status light system in dive control (Green, Yellow, Red), with override equipped audible alarm for Red status.

(a) Green status, normal dive operations

(b) Yellow status, secure dive operations and start the recovery of the diver.

(c) Red status, immediately recover the diver.

(6) Divers umbilical to be physically secured at a length 16 ft (5 m) short of the nearest thruster, Standby divers umbilical to be physically secured at a length of 6 ft (3 m) short of the nearest thruster.

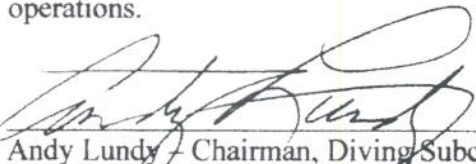
(a) Safe umbilical length calculations and diagrams for each vessel, each dive station, and depths at 30 ft (10 m) intervals will be performed and inserted in project procedures.

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Revision Recommendations Acknowledgements
April 18, 2008

The following individuals were members and participated in the review of 46 CFR 197 Sub Part B on behalf of NOSAC for the USCG:

Alan Allred	Aker Marine Contractors
Bill Crowley	President / Association of Diving Contractors International (ADCI) General Manager Equipment / Cal Dive International NOSAC Committee Member - Diving
Phil Newsum	Executive Director / Association of Diving Contractors International (ADCI)
Paul Woodhall	GoM Diving & Subsea Specialist / BP
Collin Morrison	HES Specialist / Chevron
Jane Bugler	Technical Director / International Marine Contractor Assoc. (IMCA)
Hugh Williams	Chief Executive / International Marine Contractor Assoc. (IMCA)
Andy Lundy (Chair)	District Production/Ops. Eng. / McMoRan Oil & Gas, LLC NOSAC Committee Member - Production
Jack Couch	Technical Manager / Oceaneering International, Inc.

These participants, through the course of 7 separate meetings this past year and in excess of 40 hrs. away from their regular daily responsibilities, reviewed and worked toward general agreement on the recommendations for revising 46 CFR 197 Sub Part B, provided to the USCG on behalf of NOSAC. The professionalism and cooperation of the diving industry technical organizations was exemplary and this collective expertise provided the foundation for not only the development of these recommendations but also a path forward for continuing the review and input as deemed necessary by the USCG with respect to not only this regulation but overall diving safety in general. This effort by these organizations will certainly affect diver safety in a very positive way at all levels of diving operations.


Andy Lundy - Chairman, Diving Subcommittee
Member NOSAC