USCG-98-3786-2

ASSOCIATION OF DIVING CONTRACTORS PROPOSAL FOR CHANGES TO 46 CFR CHAPTER 1 SUBCHAPTER V PART 197

REVISION 1 TO INCLUDE FINANCIAL IMPACT ANALYSIS

04/13/96

Current Edition

197.204 Definitions

Suggested definitions are not covered in current document.

Proposed Change

197.204 Definitions

ADC Association of Diving Contractors

Air Gap Distance from the surface of the water to the deck of a vessel or fixed platform.

CGA - Compressed Gas Association

Decompression Buoy A floating device used to support the diver during in-water decompression.

High Pressure **Compressor** A compressor with a discharge pressure of 500 psig or greater.

Industry Standards Association of Diving Contractors Consensus Standards.

Low **Pressure Compressor** A compressor with a discharge pressure which is less than 500psig.

Physically Confining space Any space which would restrict the divers ability to rotate himself head to toe, 180 degrees in any plane and/or when the diver has no direct access to the surface or bell.

Standby Diver A diver at the dive station. suitably dressed and briefed. ready to don his mask or helmet and enter the water to assist the diver in the water.

Reason or Justification

Addition of these definitions is desired to promote clarity and understanding or to explain new words or phrases that are proposed for inclusion in the text.

NO FINANCIAL IMPACT

Current Edition	Proposed Change	Reason or Justification
197.205 AVAILABILITY OF STANDARDS.	**197.205 AVAILABILITY OF STANDARDS.**	
(a) Several standards have been incorporated by reference in this subchapter. The incorporation by reference has been approved by the Director of the FEDERAL REGISTER under the provisions of 1 CFR Part 51.	(a) Several standards have been incorporated by reference in this subchapter. The incorporation by reference has been approved by the Director of the FEDERAL REGISTER under the provisions of I CFR Part 51.	
(b) The standards arc available from the appropriate organizations whose addresses are listed below:	(b) The standards arc available from the appropriate organizations whose addresses are listed below:	
(I) American National Standards Institute, 1430 Broadway, New York, NY 10018.	(1) American National Standards Institute, 1430 Broadway, New York, NY 10018.	
(2) American Society of Mechanical Engineers, United Engineering Center. 345 East 47th Street, New York. NY 10017.	(2) American Society of Mechanical Engineers. United Engineering Center, 345 East 47th Street. New York, NY 10017.	
	(3)Association of Diving Contractors. 26 I 1 FM 1960 West, Suite 204, Houston, Texas 7706X	Add to 197.205(b) number 3, the ADC address, as several references are made to the ADC Consensus Standards in these proposed changes. **NO FINANCIAL IMPACT**

Current Edition	Proposed Change	Reason or Justification
197.208 DESIGNATION OF PERSON-IN-CHARGE.	**197.401 DESIGNATION OF PERSON-IN-CHARGE.**	
(a) The owner or agent of a vessel or facility without a designated master shall designate, in writing. an individual to be the person-in-charge of the vessel or facility	(a) The owner or agent of a vessel or facility without a designated master shall designate. in writing, an individual to be the person-in-charge of the vessel or facility.	Move within the document to 197.401. a point. immediately preceding the responsibilities of the person in charge, for clarity and continuity.
(b) Where a master is designated, the master is the person-in-charge	(b) Where a master is designated, the master is the person-in-charge.	**NO FINANCIAL IMPACT**

Current Edition	Proposed Change	Reason or Justification
197.210 DESIGNATION OF DIVING SUPERVISOR.	197.403 DESIGNATION OF DIVING SUPERVISOR.	
The name of the diving supervisor for each commercial diving operation shall be --	The name of the diving supervisor for each commercial diving operation shall bc --	Move within the document to 197.403, a point. immediately preceding the responsibilities of the Diving Supervisor, for clarity and continuity
(a) Designated in writing: and	(a) Designated in writing; and	NO FINANCIAL IMPACT
(b) Given to the person-in-charge prior to the commencement of any commercial diving operation.	(b) Given to the person-in-charge prior to the commencement of any commercial diving operation.	

Current Edition	Proposed Change	Reason or Justification
197.300 APPLICABILITY.	197.300 APPLICABILITY.	
(a) Each diving installation used on each vessel or facility subject to this subpart must meet the requirements of this subpart.	(a) Each diving installation used on each vessel or facility subject to this subpart must meet the rcquircmcnts of this subpart	
(b) In addition to the requirements of this subpart, equipment which is permanently installed on vessels and is part of the diving installation must meet Subchapters F and J of this chapter.	(b) In addition to the requirements of this subpart. equipment which is permanently installed on vessels and is part of the diving installation must meet Subchapters F and J of this chapter.	
(c) All repairs and modifications to pressure vessels used for commercial diving operations must be made in accordance with the requirements of section VIII, division I or division 2 of the ASME Code, ASME PVHO-1. part 54 of this chapter, or 49 CFR 173.34, as applicable.	(c) All repairs and modifications to pressure vessels used for commercial diving operations must be made in accordance with the requirements of section VIII, division I or division 2 of the ASME Code, ASME PVHO-I, pan 54 of this chapter, or 49 CFR 173.34. as applicable.	
(d) All repairs and modifications to pressure piping used for commercial diving operations must be made in accordance with the requirements of the ANSI Code or Part 56 of this chapter, as applicable.	(d) All repairs and modifications to pressure piping used for commercial diving operations must be made in accordance with the requirements of the ANSI Code or Part 56 of this chapter. as applicable.	
	(e) An equipment maintenance log shall be established and maintained.	Addition of 197.300(e) establishing requirement for a maintenance log.
	(1) All diving equipment shall have a unique identity traceable to the equipment log.	MINIMAL FINANCIAL IMPACT IN THAT MOST COMPANIES PRESENTLY MAINTAIN SUCH A LOG
	(2) Entries made in the equipment log shall describe the nature of the work performed and shall include the date of modification. repair or test and the name of the individual performing the repair work or test and the identity of the particular piece of equipment involved.	
	(3) Individual persons performing maintenance. repair test or modification to diving equipment shall both print and sign his name in the equipment log.	

Current Edition

197.310 AIR COMPRESSOR SYSTEM.

A compressor used to supply breathing air to a diver must have --

(a) A volume tank that is --

(1) Built and stamped in accordance with section VIII, division 1 of the ASME Code with --

(i) A check valve on the inlet side:

(ii) A pressure gage;

(iii) A relief valve; and

(iv) A drain valve; and

(2) Tested after every repair, modification, or alteration to the pressure boundaries as required by 197.462:

(b) Intakes that are located away from areas containing exhaust fumes of internal combustion engines or other hazardous contaminants:

(c) An efficient filtration system; and

(d) Slow-opening shut-off valves when the maximum allowable working pressure of the system exceeds 500 psig.

Proposed Change

197.310 AIR COMPRESSOR SYSTEM.

Low pressure compressor systems used to supply breathing air to a diver must have --

(a) A volume tank that is --

(I) Built and stamped in accordance with section VIII. division I of the ASME Code with --

(i) A check valve on the inlet side;

(ii) A pressure gage;

(iii) A relief valve; and

(iv) A drain valve; and

(2) Tested after every repair, modification, or alteration to the pressure boundaries as required by 197.462;

(b) Intakes that are located away from areas containing exhaust fumes of internal combustion engines or other hazardous contaminants;

(c) An efficient filtration system; and

(d) Slow-opening shut-off valves when the maximum allowable working pressure of the system exceeds 500 psig.

Reason or Justification

Delete first two words “A compressor” and insert “Low pressure compressor systems".....This would clarify the intended requirement and not lump all compressors together. Therefore. a scuba compressor would not be interpreted as needing a volume tank.

NO FINANCIAL IMPACT

Current Edition	Proposed Change	Reason or Justification
197.312 BREATHING SUPPLY HOSES.	197.312 BREATHING SUPPLY HOSES.	
(a) Each breathing supply hose must --	(a) Each breathing supply hose must --	
(I) Have a maximum working pressure that is equal to or exceeds --	(1) Have a maximum working pressure that is equal to or exceeds --	
(i) The maximum working pressure of the section of the breathing supply system in which used; and	(i) The maximum working pressure of the section of the breathing supply system in which used: and	
(ii) The pressure equivalent of the maximum depth of the dive relative to the supply source plus 100 psig:	(ii) The pressure equivalent of the maximum depth of the dive relative to the supply source plus 150 psig;	Under (a) (ii) change 100psig to 150psig since many modem masks and helmets require 150psig above ambient to function properly. NO FINANCIAL IMPACT. BREATHING SUPPLY HOSES USED IN THE COMMERCIAL DIVING INDUSTRY ARE RATED TO A SUFFICIENT PRESSURE SO AS TO ACCOMMODATE THE SUGGESTED CHANGE.
(2) Have a bursting pressure of four times its maximum working pressure;	(2) Have a bursting pressure of four times its maximum working pressure;	
(3) Have connectors that --	(3) Have connectors that --	
(i) Are made of corrosion-resistant material;	(i) Are made of corrosion-resistant material;	
(ii) Are resistant to accidental disengagement; and	(ii) Are resistant to accidental disengagement; and	
(iii) Have a maximum working pressure that is at least equal to the maximum working pressure of the hose to which they are attached; and	(iii) Have a maximum working pressure that is at least equal to the maximum working pressure of the hose to which they are attached; and	
(4) Resist kinking by --	(4) Resist kinking by --	
(i) Being made of kink-resistant materials; or	(i) Being made of kink-resistant materials: or	
(ii) Having exterior support.	(ii) Having exterior support to an industry recognized standard.	Under (4)(b)(ii) add---To an industry recognized standard.
(b) Each umbilical must --	(b) Each umbilical must --	
(1) Meet the requirements of paragraph (a) of this section; and	(I) Meet the requirements of paragraph (a) of this section: and	
(2) Be marked from the diver or open bell end in lo-foot intervals to 100 feet and in 50-foot intervals thereafter.	(2) Be marked from the diver or open bell end in IO-foot intervals to 100 feet and in 50-foot intervals thereafter.	NO FINANCIAL IMPACT. CHANGE TO STANDARDIZED MARKING CAN BE MADE OVER A MINIMAL PERIOD OF TIME DURING ROUTINE UMBILICAL MAINTENANCE.

Current Edition	Proposed Change	Reason or Justification
197.314 FIRST AID AND TREATMENT EQUIPMENT.	**197.314 FIRST AID AND TREATMENT EQUIPMENT.**	
(a) Each dive location must have --	(a) Each dive location must have --	
(1) A medical kit approved by a physician that consists of --	(I) A medical kit approved by a physician that consists of --	
(i) Basic first aid supplies; and	(i) Basic first aid supplies; and	
(ii) Any additional supplies necessary to treat minor trauma and illnesses resulting from hyperbaric exposure;	(ii) Any additional supplies necessary to treat minor trauma and illnesses resulting from hyperbaric exposure:	
(2) A copy of an American Red Cross Standard First Aid handbook;	(2) A copy of an appropriate first aid handbook.	(a) (2) Change "American Red Cross Standard" to read "an appropriate first aid handbook". NO **FINANCIAL IMPACT.**
(3) A bag-type manual resuscitator with transparent mask and tubing; and	(3) A capability to remove an injured diver from the water.	(a) (3) Delete the requirement for this type of device as doctors who are diving medical experts, as well as emergency room doctors, suggest that even trained technicians who do not utilize this equipment on a frequent basis may not provide proper respiration and that they would prefer the use of mouth to mouth rcsusitation. Additionally mouth to mouth does not rely on a piece of equipment which is subject to failure or partial failure where the user assumes it is doing its job. **REPRESENTS A COST SAVING TO DIVING COMPANIES.**
(4) A capability to remove an injured diver from the water.		
(b) Each diving installation must have a two-way communication system to obtain emergency assistance except when the vessel or facility ship-to-shore, two-way communications system is readily available.	(b) Each diving installation must have a two-way communication system to obtain emergency assistance except when the vessel or facility ship-to-shore. two-way communications system is readily available.	
(c) Each dive location supporting mixed-gas dives, dives deeper than 130 fsw. or dives outside the no-decompression limits must meet the requirements of paragraph (a) of this section and have	(c) Each dive location supporting mixed-gas dives. dives deeper than 80 fsw, or dives outside the no-decompression limits must meet the requirements of paragraph (a) of this section and have	(c) Change 130 FSW to SO FSW.Very little no-decompression diving work is done in depths of 80-130 fsw (present limits). Since a chamber is required for any diving outside of the no decompression limits there would be very little economic impact. Additionally. an embolism is possible at any depth and treatment requires a chamber. **NO EFFECTIVE FINANCIAL IMPACT.**
(I) A decompression chamber;	(1) A decompression chamber:	
(2) Decompression and treatment tables;	(2) Decompression and treatment tables:	
(3) A supply of breathing gases sufficient to treat for decompression sickness;	(3) A supply of breathing gases sufficient to treat for decompression sickness:	

Current Edition	Proposed Change	Reason or Justification
(4) The medical kit required by paragraph (a)(1) of this section that is --	(4) The medical kit required by paragraph (a)(1) of this section that is --	No changes this section.
(i) Capable of being carried into the decompression chamber; and	(i) Capable of being carried into the decompression chamber; and	
(ii) Suitable for use under hyperbaric conditions; and	(ii) Suitable for use under hyperbaric conditions; and	
(5) A capability to assist an injured diver into the decompression chamber.	(5) A capability to assist an injured diver into the decompression chamber.	

Current Edition	Proposed Change	Reason or Justification
197.318 GAGES AND TIMEKEEPING DEVICES.	**197.318 GAGES AND TIMEKEEPING DEVICES.**	
(a) A gage indicating diver depth must be at each dive location for surface-supplied dives.	(a) A gage indicating diver depth must be at each dive location for surface-supplied dives.	Add to (a) 1 and 2 to insure gauge is applicable for the service intended.
	(I) It shall be of appropriate range and graduation when utilized to indicate a divers depth.	**NO FINANCIAL IMPACT. CONSISTENT WITH INDUSTRY PRACTICE.**
	(2) It shall be graduated in units which are consistent with the decompression tables to be utilized.	
(b) A timekeeping device must be at each dive location.	(b) A timekeeping device must be at each dive location.	

Current Edition	Proposed Change	Reason or Justification
197.320 DIVING LADDER AND STAGE.	**197.320 DIVING LADDER AND STAGE.**	
(a) Each diving ladder must --	(a) Each diving ladder must --	
(1) Bc capable of supporting the weight of at least two divers;	(I) Be capable of supporting the weight of at least two divers;	
(2) Extend 3 feet below the water surface;	(2) Be of sufficient length to allow the diver to enter and exit the water safely;	Change (a)(2) to read "be of sufficient length to allow the diver to enter and exit the water safely." to better service the intent, with a 3 foot swell the existing requirement would not satisfy the safety requirements of the diver.
(3) Be firmly in place;	(3) Be firmly in place:	
(4) Be available at the dive location for a diver to enter or exit the water unless a diving stage or bell is provided; and	(4) Be available at the dive location for a diver to enter or exit the water unless a diving stage or bell is provided: and	**MINIMAL FINANCIAL IMPACT. CONSISTENT WITH INDUSTRY PRACTICE.**
(5) Be --	(5) Be --	
(i) Made of corrosion-resistant material; or (ii) Protected against and maintained free from injurious corrosion.	(i) Made of corrosion-resistant material: or (ii) Protected against and maintained free from injurious corrosion.	
(b) Each diving stage must -- (I) Be capable of supporting the weight of at least two divers;	(b) Each diving stage must -- (1) Be capable of supporting the weight of at least two divers;	
(2) Have an open-grating platform;	(2) Have an open-grating platform;	
(3) Be available for a diver to enter or exit the water from the dive location and for in-water decompression if the diver is -- (i) Wearing a heavy-weight diving outfit; or (ii) Diving outside the no-decompression limits, except when a bell is provided: and	(3) Be available for a diver to enter or exit the water from the dive location and for in-water decompression if the diver is -- (i) Wearing a heavy-weight diving outfit: or (ii) diving on a decompression table requiring in-water decompression. except when a bell is provided.: (iii) exposed to an air gap of greater than 15 feet, or (iv) where conditions or crew sire prohibits the recovery of the diver to the dive station. and	enhances current requirements and provides greater safety for the diver. **MINIMAL FINANCIAL IMPACT. CONSISTENT WITH INDUSTRY PRACTICE.**
(4) Be -- (i) Made of corrosion-resistant material; or (ii) Protected against and maintained free from injurious corrosion.	(4) Be -- (i) Made of corrosion-resistant material; or (ii) Protected against and maintained free from injurious corrosion.	

Current Edition	Proposed Change	Reason or Justification
197.326 OXYGEN SAFETY.	197.326 OXYGEN SAFETY.	
(a) Equipment used with oxygen or oxygen mixtures greater than 40 percent. by volume must be designed for such use.	(a) Equipment used exclusively for oxygen mixtures. must be designed for such use.	197.326a) is changed to read: Equipment used *exclusively* for oxygen must be designed for such use. Current industry practice includes the use of 50/50 NITROX treatment tables which would be a technical violation of existing wording.
(b) Oxygen systems with pressures greater than 125 psig must have slow-opening shut-off valves except pressure boundary shut-off valves may be ball valves.	(b) Oxygen systems with pressures greater than 125 psig must have slow-opening shut-off valves except pressure boundary shut-off valves may be ball valves.	BENIFICIAL FINANCIAL IMPACT WITH NO DEGREDATION OF SAFETY.

Current Edition	Proposed Change	Reason or Justification
197.328 PVHO -GENERAL.	197.328 PVHO -GENERAL.	
(a) Each PVHO. contracted for or purchased after February I. 1979. must be built and stamped in accordance with ASME PVHO-I.	(a) Each U.S built pvho. contracted for or purchased after February I. 1979. must be built and stamped in accordance with ASME PVHO-I.	This wording change of 197.328 (a) through(e) would allow for the use of pvho's built to standards other than ASME/PVHO- I. This approach would be consistant with current Coast Guard initiatives in Maritime Regulatory Reform and the move toward acceptance of Class standards.
(b) Each PVHO, contracted for or constructed before February 1, 1979, and not Coast Guard approved, must be submitted to the Coast Guard for approval prior to February 1, 1984.	(b) Each US built pvho, constructed before February 1, 1979, and not Coast Guard approved. must be submitted to the Coast Guard for approval.	
(c) To be approved under paragraph(b), a PVHO must be --	(c) To be approved under paragraph (b), a PVHO must be --	
(I) Constructed in accordance with Part 54 of this chapter; or --	(I) Constructed in accordance with Part 54 of this chapter; or --	
(2) Be built in accordance with section VIII, division I or division 2 of the ASME Code; and --	(2) Be built in accordance with section VIII. division I or division 2 of the ASME Code; or recognized Class Society standards and --	
(i) Have the plans approved in accordance with 54.01-18 of this chapter:	(3) Have plans approved in accordance with 54.01-18 of this Chapter or Class requirements;	
(ii) Pass the radiographic and other survey tests of welded joints required by section VIII, division 1 or division 2, as appropriate, of the ASME Code; and	(4) Pass the radiographic and other survey tests of welded joints required by the code of construction;	BENEFICIAL FINANCIAL IMPACT WITH NO DEGREDATION OF SAFETY. CHANGE MERELY CLARIFIES USE OF A PVHO WHICH HAS BEEN CONSTRUCTED IN ACCORDANCE WITH A RECOGNIZED CLASSING SOCIETY.
(iii) Pass --	(5) Pass a hydrostatic test in accordance with the code of construction	
(A) The hydrostatic test described in 54.10-IO of this chapter; or	(d) PVHO's built to other recognized standards shall be designed. fabricated. inspected. tested. and certified to bc in compliance with a recognized Classing Society with rules for diving systems and be maintained in class.	
(B) The pneumatic test described in 54.10-15 of this chapter and such additional tests as the Officer-in-Charge, Marine Inspection (OCMI) may require.		
(d) Each PVHO must	(e) Each PVHO must	
(I) Have a shut-off valve located within I foot of the pressure boundary on all piping penetrating the pressure boundary;	(1) Have a shut-off valve located within I foot of the pressure boundary on all piping penetrating the pressure boundary:	

Current Edition	Proposed Change	Reason or Justification
(2) Have a check valve located within I foot of the pressure boundary on all piping exclusively carrying fluids into the PVHO;	(2) Have a check valve located within I foot of the pressure boundary on all piping exclusively carrying fluids into the PVHO;	No changes this section.
(3) Have the pressure relief device required by ASME PVHO- I ;	(3) Have the pressure relief device required by ASME PVHO-I:	
(4) Have a built-in breathing system with at least one mask per occupant stored inside each separately pressurized compartment;	(4) Have a built-in breathing system with at least one mask per occupant stored inside each separately pressurized compartment;	
(5) Have a two-way voice communications system allowing communications between an occupant in one pressurized compartment of the PVHO and	(5) Have a two-way voice communications system allowing communications between an occupant in one pressurized compartment of the PVHO and --	
(i) The diving supervisor at the dive location;	(i) The diving supervisor at the dive location;	
(ii) Any divers being supported from the same PVHO; and	(ii) Any divers being supported from the same PVHO; and	
(iii) Occupants of other separately pressurized compartments of the same PVHO;	(iii) Occupants of other separately pressurized comparhnents of the same PVHO;	
(6) If designed to mechanically couple to another PVHO, have a two way communications system between occupants of each PVHO when mechanically coupled;	(6) If designed to mechanically couple to another PVHO, have a two way communications system between occupants of each PVHO when mechanically coupled;	
(7) Have a pressure gage in the interior of each compartment that is -- (i) Designed for human occupancy; and (ii) Capable of having the compartment pressure controlled from inside the PVHO;	(7) Have a pressure gage in the interior of each compartment that is -- (i) Designed for human occupancy; and (ii) Capable of having the compartment pressure controlled from inside the PVHO;	
(8) Have viewports that allow observation of occupants from the outside;	(8) Have viewports that allow observation of occupants from the outside:	
(9) Have viewports that meet the requirements of ASME PVHO-I except those PVHOS approved under paragraph(b) of this section which have nonacrylic viewports;	(9) Have viewports that meet the requirements of ASME PVHO-I except those PVHO's approved under paragraph (b) of this section which have nonacrylic viewports;	

Current Edition	Proposed Change	Reason or Justification
(IO) Have means of illumination sufficient to allow an occupant to --	(IO) Have means of illumination sufficient to allow an occupant to --	No changes this section.
(i) Read gages; and	(i) Read gages; and	
(ii) Operate the installed systems within each compartment;	(ii) Operate the installed systems within each compartment:	
(I 1) Be designed and equipped to minimize sources of combustible materials and ignition;	(1 I) Be designed and equipped to minimize sources ofcombustible materials and ignition:	
(12) Have a protective device on the inlet side of PVHO exhaust lines;	(12) Have a protective device on the inlet side of PVHO exhaust lines:	
(13) Have a means of extinguishing a fire in the interior:	(13) Have a means of extinguishing a fire in the interior;	
(14) Have a means of maintaining the oxygen content of the interior atmosphere below 25 percent surface equivalent by volume when pressurized with air as the breathing mixture;	(14) Have a means of maintaining the oxygen content of the interior atmosphere below 25 percent surface equivalent by volume when pressurized with air as the breathing mixture;	
(15) Have a means of maintaining the interior ahnosphere below 2 percent surface equivalent carbon dioxide by volume;	(15) Have a means of maintaining the interior ahnosphere below 2 percent surface equivalent carbon dioxide by volume:	
(16) Have a means of overriding and controlling from the exterior all interior breathing and pressure supply controls;	(16) Have a means of overriding and controlling from the exterior all interior breathing and pressure supply controls:	
(17) Have a speech unscrambler when used with mixed-gas:	(17) Have a speech unscrambler when used with mixed-gas:	
(18) Have interior electrical systems that are designed for the environment in which they will operate to minimize the risk of fire, electrical shock to personnel. and galvanic action of the PVHO: and	(18) Have interior electrical systems that are designed for the environment in which they will operate to minimize the risk of tire. electrical shock to personnel. and galvanic action of the PVHO: and	
(19) Be tested after every repair, modification, or alteration to the pressure boundaries as required by 197.462.	(19) Be tested after every repair. modification. or alteration to the pressure boundaries as required by 197.462.	

Current Edition	Proposed Change	Reason or Justification
197.330 PVHO - CLOSED BELLS.	**197.330 PVHO -CLOSED BELLS.**	
(a) Except as provided in paragraph(b) of this section. each closed bell must meet the requirements of 197.328 and --	(a) Except as provided in paragraph(b) of this section. each closed bell must meet the requirements of 197.328 and --	
(I) Have underwater breathing apparatus for each occupant stored inside each separately pressurized compartment:	(I) Have underwater breathing apparatus for each occupant stored inside each separately pressurized compartment;	
(2) Have an umbilical;	(2) Have an umbilical;	
(3) Have lifting equipment attached to the closed bell capable of retuning the occupied closed bell when fully flooded to the dive location;	(3) Have lifting equipment attached to the closed bell capable of returning the occupied closed bell when fully flooded to the dive location;	
(4) Be capable of recompressing on the surface to the maximum design diving depth;	(4) Be capable of recompressing on the surface to the maximum design diving depth;	
(5) Be constructed and equipped as required by 197.332;	(5) Have an emergency locating device designed to assist personnel on the surface in acquiring and maintaining contact with the submerged PVHO if the umbilical to the surface is severed;	Delete (a)(5) as it is a poor reference which invokes requirements, (197.332 h-f), which are impractical. ie bunks in bells?
(6) Have an emergency locating device designed to assist personnel on the surface in acquiring and maintaining contact with the submerged PVHO if the umbilical to the surface is severed;	(6) Have a capability to remove an injured diver from the water: and	
(7) Have a capability to remove an injured diver from the water; and	(7) Have a life support capability with:	Change 7 to 6.
(X) Have a life support capability for the intact closed bell and its occupants for --	(i) sufficient onboard breathing gas to allow a diver to remain outside the bell, for 30 minutes at the maximum depth rating of the bell, or dive site natural bottom whichever is less, at a breathing rate of 1.5 ACFM, and	Change 8 to 7 and drop " for the intact closed hell....” and reword (a)X(i) and (ii) for original wording is unclear and seems to indicate an option which is open to interpretation.
(i) Twelve hours after an accident severing the umbilical to the surface when the umbilical to the surface is the only installed means of retrieving the closed bell: or	(ii) sufficient metabolic oxygen onboard to support the number of occupants for a period of 24 hours at a consumption rate of .017 cubic feet per minute per occupant.	**NO FINANCIAL IMPACT** PRESENTED BY ANY ABOVE RECOMMENDED CHANGES.
(ii) A period of time, at least equal to 1 hour plus twice the time required to retrieve the bell from its designed operating depth and attach an auxiliary life support system. after an accident severing the		

Current Edition	Proposed Change	Reason or Justification
umbilical to the surface when the umbilical is one of the two independent installed means of retrieving the closed bell, each meeting the requirements of paragraph (a)(3) of this section.		
(b) A closed bell that does not meet the requirements of paragraph (a)(3). (a)(4), and (a)(5) of this section. must be capable of attachment to another PVHO that -- (I) Allows the transfer of personnel and diver's equipment under pressure from the closed bell to the PVHO; (2) Meets the requirements ofparagraph (a)(3) of this section; (3) Is capable of attachment to a decompression chamber meeting the requirements of paragraphs **(a)(4)** and (a)(5) of this section; and (4) Allows the transfer of personnel and diver's equipment under pressure from the PVHO to the decompression chamber.	(b) A closed bell that does not meet the requirements of paragraph (a)(3), and (a)(4) of this section. must be capable of attachment to another PVHO that -- (1) Allows the transfer of personnel and diver's equipment under pressure from the closed bell to the PVHO: (2) Meets the requirements of paragraph (a)(3) of this section: (3) Is capable of attachment to a decompression chamber meeting the requirements of paragraphs (a)(4) and (a)(5) of this section; and (4) Allows the transfer of personnel and diver's equipment under pressure from the PVHO to the decompression chamber.	Reference to (a)(5) is deleted in that it will be deleted as indicated above. **NO FINANCIAL IMPACT**

Current Edition	Proposed Change	Reason or Justification
197.338 COMPRESSED GAS CYLINDERS.	197.338 COMPRESSED GAS CYLINDERS.	
Each compressed gas cylinder must --	Each compressed gas cylinder must --	
(a) Be stored in a ventilated area:	(a) Be stored in a ventilated area;	
(b) Bc protected from excessive heat;	(b) Be protected from excessive heat:	
(c) Be prevented from falling;	(c) Be prevented from falling:	
(d) bc tested after any repair. modification, or alteration to the pressure boundaries as set forth in 197.462; and	(d) be tested after any repair, modification, or alteration to the pressure boundaries as set forth in 197.462; and	
	(e) be visually examined annually for damage or corrosion.	Change of(e) to (h) and addition of new (e) , (f) , and (g), improves safety MINIMAL FINANCIAL IMPACT. CHANGES RECOMMENDED ARE CONSISTENT WITH INDUSTRY PRACTICE.
	(f) be inspected internally annually if used underwater.	
	(g) be labeled as to contents.	
(e) Meet the requirements of --	(h) Meet the requirements of --	
(1) Part 54 of this Chapter; or	(I) Part 54 of this Chapter; or	
(2) 49 CFR 173.34 and 49 CFR 17X Subpart C.	(2) 49 CFR 173.34 and 49 CFR 178 Subpart C.	

Current Edition	Proposed Change	Reason or Justification
197.340 BREATHING GAS SUPPLY.	**197.340 BREATHING GAS SUPPLY.**	
(a) A primary breathing gas supply for surface-supplied diving must be sufficient to support the following for the duration of the planned dive:	(a) A primary breathing gas supply must be sufficient to support the following for the duration of the planned dive:	The phrase " for surface supplied diving" is deleted as there is no need to limit stipulation to this mode.
(1) The diver.	(1) The diver.	**NO FINANCIAL IMPACT**
(2) The standby diver.	(2) The standby diver.	
(3) The decompression chamber, when required by 197.432(e)(2) or by 197.434(a) for the duration of the dive and for one hour after completion of the planned dive.	(3) The decompression chamber, when required by 197.432(e)(2) or by 197.434(a) for the duration of the dive and for one hour after completion of the planned dive.	
(4) A decompression chamber when provided but not required by this subpart.	(4) A decompression chamber when provided but not required by this subpart.	
(5) A closed bell when provided or required by 197.434 (d).	(5) A closed bell when provided or required by 197.434 (d).	
(6) An open bell when provided or required by 197.432 (e)(4) or by 197.434(c)	(6) An open bell when provided or required by 197.432 (e)(4) or by 197.434(c)	
(b) A secondary breathing gas supply for surface-supplied diving must be sufficient to support the following:	(b) A secondary breathing gas supply must be sufficient to support the following:	As above the phrase "for surface supplied diving" is deleted.
(I) The diver while returning to the surface.	(I) The diver while returning to the surface or the bell.	Add " or to the bell" to (b)(I).
(2) The diver during decompression.	(2) The diver during decompression.	**NO FINANCIAL IMPACT** PRESENTED BY ANY ABOVE RECOMMENDED CHANGES.
(3) The standby diver.	(3) The standby diver.	
(4) The decompression chamber when required by 197.432 (c)(2) or by 197.434(a) for the duration of the dive and one hour after the completion of the planned dive.	(4) The decompression chamber when required by 197.432 (c)(2) or by 197.434(a) for the duration of the dive and one hour after the completion of the planned dive.	
(5) The closed bell while returning the diver to the surface.	(5) The closed bell while returning the diver to the surface.	

Current Edition	Proposed Change	Reason or Justification
(6) The open bell while returning the diver to the surface.	(6) The open bell while returning the diver to the surface.	
(c) A diver-carried reserve breathing gas supply for surface-supplied diving must be sufficient to allow the diver to --	(c) A diver-carried reserve breathing gas supply must be sufficient to allow the diver to --	As before delete " for surface supplied diving"
(1) Reach the surface.	(I) Reach the surface. the bell or,	Add " the bell or, " for bell or saturation diving mode,
(2) Reach another source of breathing gas; or	(2) Reach another source of breathing gas; or	
(3) Be reached by a standby diver equipped with another source of breathing gas for the diver.	(3) Be reached by a standby diver equipped with another source of breathing gas for the diver.	**NO FINANCIAL IMPACT** PRESENTED BY ANY ABOVE RECOMMENDED CHANGES.
(d) A primary breathing gas supply for SCUBA diving must be sufficient to support the diver for the duration of the planned dive through his return to the dive location or planned pick-up point.	(d) A primary breathing gas supply for SCUBA diving must be sufficient to support the diver for the duration of the planned dive through his return to the dive location or planned pick-up point.	
(e) A diver-carried reserve breathing gas supply for SCUBA diving must be sufficient to allow the diver to return to the dive location or planned pick-up point from the greatest depth of the planned dive.	(e) A diver-carried reserve breathing gas supply for SCUBA diving must be sufficient to allow the diver to return to the dive location or planned pick-up point from the greatest depth of the planned dive.	
(f) Oxygen used for breathing mixtures must --	(f) Oxygen used for breathing mixtures must --	
(I) Meet the requirements of Federal Specification BB-0-925a; and	(I) Meet the requirements of Federal Specification BB-0-925a; and	
(2) Be type 1 (gaseous) grade A or B.	**(2)** Be type I (gaseous) grade A or B.	
(g) Nitrogen used for breathing mixtures must --	(g) Nitrogen used for breathing mixtures must --	
(I) Meet the requirements of Federal Specification BB-N-41 lc:	(1) Meet the requirements of Federal Specification BB-N-4 I 1c;	
(2) Be type I (gaseous):	(2) Be type 1 (gaseous):	
(3) Bc class I (oil-free): and	(3) Bc class I (oil-free): and	
(4) Be grade A .B. or C.	**(4)** Be grade A .B. or C.	

Current Edition

(h) Helium used for breathing mixtures must be grades A. B. or C produced by the Federal Government, or equivalent.

(i) Compressed air used for breathing mixtures must

(1) Be 20 to 22 percent oxygen by volume;

(2) Have no objectionable odor; and

(3) Have no more than --

(i) 1.000 parts per million of carbon dioxide;

(ii) 20 parts per million carbon monoxide;

(iii) 5 milligrams per cubic meter of solid and liquid particulates including oil; and

(iv) 25 parts per million of hydrocarbons (includes methane and all other hydrocarbons expressed as methane).

Proposed Change

(h) Helium used for breathing mixtures must be grades A, B, or C produced by the Federal Government, or equivalent.

(i) Compressed air used for breathing mixtures must

(I) meet the requirements of ANSI/CGA 7. I grade "D" or equilvalent.

(2) be CGA grade "E" for synthesized air.

Reason or Justification

Delete (i) , (1). (2), (3) and replace with a published industry standard, which would automatically include a testing methodology..

NO FINANCIAL IMPACT.

Current Edition	Proposed Change	Reason or Justification
197.346 DIVER'S EQUIPMENT.	197.346 DIVER'S EQUIPMENT.	
(a) Each diver using SCUBA must have --	(a) Each diver using SCUBA must have --	No changes this page of this section.
(1) Self-contained underwater breathing equipment including --	(1) Self-contained underwater breathing equipment including --	NO FINANCIAL IMPACT
(i) A primary breathing gas supply with a cylinder pressure gage readable by the diver during the dive; and	(i) A primary breathing gas supply with a cylinder pressure gage readable by the diver during the dive; and	
(ii) A diver-carried reserve breathing gas supply provided by --	(ii) A diver-carried reserve breathing gas supply provided by --	
(A) A manual reserve (J valve): or	(A) A manual reserve (J valve); or	
(B) An independent reserve cylinder connected and ready for use;	(B) An independent reserve cylinder connected and ready for use:	
(2) A face mask;	(2) A face mask;	
(3) An inflatable floatation device;	(3) An inflatable floatation device;	
(4) A weight belt capable of quick release;	(4) A weight belt capable of quick release;	
(5) A knife;	(5) A knife;	
(6) Swim fins or shoes:	(6) Swim tins or shoes;	
(7) A diving wristwatch: and	(7) A diving wristwatch: and	
(8) A depth gage.	(8) A depth gage.	
(b) Each diver using a heavyweight diving outfit must --	(b) Each diver using a heavyweight diving outfit must	
(1) Have a helmet group consisting of helmet, breastplate, and associated valves and connections;	(1) Have a helmet group consisting of helmet. breastplate, and associated valves and connections:	
(2) Have a diving dress group consisting of a basic dress that encloses the body (except for head and hands) in a tough, waterproof cover. gloves, shoes. weight assembly. and knife:	(2) Have a diving dress group consisting of a basic dress that encloses the body (except for head and hands) in a tough. waterproof cover. gloves. shoes. weight assembly. and knife;	

Current Edition	Proposed Change	Reason or Justification
(3) Have a hose group consisting of the breathing gas hose and fittings. the control valve. thc lifeline. communications cable. and a pneumofathometer: and	(3) Have a hose group consisting of thc breathing gas hose and fittings. the control valve. the lifelinc. communications cable, and a pneumofathometer; and	
(4) Be provided with a helmet cushion and weighted shoes.	(4) Be provided with a helmet cushion and weighted shoes.	
(c) Each surface-supplied dive operation using a heavyweight diving outfit must have an extra breathing gas hose with attaching tools available to the standby diver.	(c) Each surface-supplied dive operation using a heavyweight diving outfit must have an extra breathing gas hosc with attaching tools available to the standby diver.	
(d) Each diver using a lightweight diving outfit must have -- (1) A safety harness; (2) A weight assembly capable of quick release; (3) A mask group consisting of a lightweight mask and associated valves and connections; (4) A diving dress group consisting of wet or dry diving dress, gloves. shoes or tins, and knife; and	(d) Each diver using a lightweight diving outfit must have -- (1) A safety harness; (2) A weight assembly capable of quick release; (3) A mask group consisting of a lightweight mask and associated valves and connections; (4) A diving dress group consisting of a diving dress that provides suitable protection for existing environmental conditions and maintins the divers thermal balance within normal limits; and	Paragraph (d)(4) is reworded for clarity and to better define the requirements, addresses potential problems not previously included. **MINIMAL FINANCIAL IMPACT. <u>CONSISTENT WITH INDUSTRY PRACTICE.</u>**
(5) A hose group consisting of the breathing gas hose and fittings, the control valve, the lifeline, communications cable, and a pneumofathometer (if the breaking strength of the communications cable is at least equal to that required for the lifeline, the communications cable can serve as the lifeline).	(5) A hose group shall consist of; a breathing gas hose, communications cable, a means of determining the divers depth and an included strength member. (i) The nominal break strength of the hose group assembly, including the terminating hardware shall be 1.000 Ibs.	Paragraph (d)(5) is reworded for clarity and to better define the requirements addresses standard and safe industry practice and further defines the breaking strength of the assembly previously undefined. **NO FINANCIAL IMPACT. <u>CONSISTENT WITH INDUSTRY PRACTICE.</u>**
(e) Each surface-supplied air dive operation within thc no-decompression limits and to depths of 130 fsw or less must have a primary breathing gas supply at the dive location.	(e) Each surface-supplied dive operation must have at thc dive location --	Paragraph(e) is deleted and(f) is made (e) and reworded to include all surface diving.
(f) Each surface-supplied dive operation outside the no-decompression limits, deeper than 130 fsw, or using mixed-gas as a breathing mixture must have at the dive location --		

Current Edition	Proposed Change	Reason or Justification
(1) A primary breathing gas supply; (2) A secondary breathing gas supply. (g) Each diver diving outside the no-decompression limits, deeper than 130 fsw, or using mixed-gas must have a diver-carried reserve breathing gas supply except when using a heavy-weight diving outfit or when diving in a physically confining area.	(1) A primary breathing gas supply; and (2) A secondary breathing gas supply. (f) Each diver diving outside the no-decompression limits, deeper than 80 fsw, or using mixed-gas must have a diver-carried reserve breathing gas supply except when using a heavy-weight diving outfit.	(g) is changed to (f) , 130 FSW to 80 FSW, and "or when diving in a physically confining area" is deleted, as there is no viable reason to allow these exceptions or eliminate the need for diver carried reserve breathing gas. **MINIMAL FINANCIAL IMPACT.** **CONSISTENT WITH INDUSTRY PRACTICE.**

Current Edition	Proposed Change	Reason or Justification
197.404 RESPONSIBILITIES OF THE DIVING SUPERVISOR.	197.404 **RESPONSIBILITIES** OF THE DIVING SUPERVISOR.	
(a) The diving supervisor shall --	(a) The diving supervisor shall be qualified to supervise the type of diving for which hc will bc responsiblc and shall:	The phrase " shall be qualified to supervise the type of diving for which he will bc responsible" is added to (a) to better define the role and requirement.
(1) Be fully cognizant of the provisions of this subpart;	(1) Be fully cognizant of the provisions of this subpart:	NO FINANCIAL IMPACT. CONSISTENT WITH INDUSTRY PRACTICE.
(2) Be fully cognizant of the provisions of the operations manual required by 197.420;	(2) Be fully cognizant of the provisions of the operations manual required by 197.420;	
(3) Insure that diving operations conducted from a vessel or facility subject to this subpart meet the regulations in this subpart;	(3) Insure that diving operations conducted from a vessel or facility subject to this subpart meet the regulations in this subpart;	
(4) Prior to the commencement of any commercial diving operation, provide the report required by 197.402 to the person-in-charge;	(4) Prior to the commencement of any commercial diving operation, provide the report required by 197.402 to the person-in-charge;	
(5) Coordinate with the person-in-charge any changes that are made to the report required by 197.402; and	(5) Coordinate with the person-in-charge any changes that are made to the report required by 197.402; and	
(6) Promptly notify the person-in-charge of any diving related casualty, accident, or injury.	(6) Promptly notify the person-in-charge of any diving related casualty, accident. or injury	
(b) The diving supervisor is in charge of the planning and execution of the diving operation includine the responsibility for the safety and health of the dive team.	(b) The diving supervisor is in charge of the planning and execution of the diving operation includinc the responsibility for the safety and health of the dive team.	

Current Edition

197.410 DIVE PROCEDURES.

The diving supervisor shall insure that --

(I) Before commencing diving operations. dive team members are briefed on --

(i) The tasks to be undertaken;

(ii) Any unusual hazards or environmental conditions likely to affect the safety of the diving operation: and

(iii) Any modifications to the operations manual or procedures including safety procedures necessitated by the specific diving operation;

(2) The breathing gas supply systems, masks, helmets, thermal protection when provided, and bell lifting equipment, when a bell is provided or required, are inspected prior to each diving operation;

(3) Each diver is instructed to report any physical problems or physiological effects including aches, pains, current illnesses, or symptoms of decompression sickness prior to each dive;

(4) A depth, bottom time profile, including any breathing mixture changes, is maintained at the dive location for each diver during the dive. except that SCUBA divers shall maintain their own profiles;

(5) A two-way voice communication system is used between --

(i) Each surface-supplied diver and a dive team member at the dive location or bell (when provided); and

(ii) The bell (when provided) and the dive location:

Proposed Change

197.410 DIVE PROCEDURES.

The diving supervisor shall insure that --

(I) Before commencing diving operations. dive team members are briefed on --

(i) The tasks to be undertaken;

(ii) Any unusual hazards or environmental conditions likely to affect the safety of the diving operation: and

(iii) Any modifications to the operations manual or procedures including safety procedures necessitated by the specific diving operation:

(2) The breathing gas supply systems, masks, helmets, thermal protection, when provided, and bell lifting equipment, when a bell is provided or required, are inspected prior to each diving operation;

(3) Each diver is instructed to report any physical problems or physiological effects including aches, pains, current illnesses, or symptoms of decompression sickness prior to each dive:

(4) A depth, bottom time profile, including any breathing mixture changes, is maintained at the dive location for each diver during the dive. except that SCUBA divers shall maintain their own profiles:

(5) A two-way voice communication system is used between --

(i) Each surface-supplied diver and a dive team member at the dive location or bell (when provided); and

(ii) The bell (when provided) and the dive location:

Reason or Justification

No changes to this part of this section.

NO FINANCIAL IMPACT

Current Edition	Proposed Change	Reason or Justification
(6) A two-way communication system is available at the dive location to obtain emergency assistance;	(6) A two-way communication system is available at the dive location to obtain emergency assistance;	
	(7) during the dive. (i)The Diving Supervisor shall not undertake or be assigned any secondary duties which might limit his ability to carry out his primary duties of supervising the dive. (ii)Any dive team member shall not undertake or be assigned any secondary task that might interfere with that members primary duties.	This section is added to insure that neither the supervisor's nor any dive team member's attention deviates from their primary duty. **NO FINANCIAL IMPACT. CONSISTENT WITH INDUSTRY PRACTICE.**
(7) After the completion of each dive --	(8) After the completion of each dive the supervisor shall insure that;	Paragraph (7) is made 8 and the phrase "*the supervisor shall* insure *that*" is added to the opening.
(i) The physical condition of the diver is checked by --	(i) The physical condition of the diver is checked by --	
(A) Visual observation; and	(A) Visual observation; and	
(B) Questioning the diver about his physical well-being;	(B) Questioning the diver about his physical well-being;	
(ii) The diver is instructed to report any physical problems or adverse physiological effects including aches, pains, current illnesses, or symptoms of decompression sickness or gas embolism;	(ii) The diver is instructed to report any physical problems or adverse physiological effects including aches, pains, current illnesses, or symptoms of decompression sickness or gas embolism;	
(iii) The diver is advised of the location of an operational decompression chamber; and	(iii) The diver is advised of the location of an operational decompression chamber; and	
(iv) The diver is alerted to the potential hazards of flying after diving;	(iv) The diver is alerted to the potential hazards of flying after diving:	
(8) For any dive outside the no-decompression limits, deeper than 130 fsw, or using mixed-gas as a breathing mixture --	(9) For any dive outside the no-decompression limits. deeper than 80 fsw. or using mixed-gas as a breathing mixture --	Para (9) Very little no-decompression diving work is done in depths of 80 -130 fsw (present limits) Since a chamber is required for any diving outside of the no-decompression limits there would be very **MINIMAL FINANCIAL IMPACT.** Additionally. an embolism is possible at any depth and treatment requires a chamber.
(i) A depth. time. decompression profile including breathing mixture changes is maintained for each diver at the dive location:	(i) A depth. time, decompression profile including breathing mixture changes is maintained for each diver at the dive location:	

Current Edition	Proposed Change	Reason or Justification
(ii) The diver is instructed to remain awake and in the vicinity of the dive location decompression chamber for at least one hour after the completion of a dive, decompression, or treatment: and	(ii) The diver is instructed to remain awake and in the vicinity of the dive location decompression chamber for at least one hour after the completion of a dive, decompression, or treatment: and	No changes to this section on this page, **NO FINANCIAL IMPACT**
(iii) A dive team member. other than the diver. is trained and available to operate the decompression chamber; and	(iii) A dive team member. other than the diver, is trained and available to operate the decompression chamber; and	
(9) When decompression sickness or gas embolism is suspected or symptoms are evident, a report is completed containing --	(9) When decompression sickness or gas embolism is suspected or symptoms are evident. a report is completed containing --	
(i) The investigation for each incident including --	(i) The investigation for each incident including –	
(A) The dive and decompression profiles;	(A) The dive and decompression profiles;	
(B) The composition, depth, and time of breathing mixture changes;	(B) The composition, depth, and time of breathing mixture changes;	
(C) A description of the symptoms including depth and time of onset; and	(C) A description of the symptoms including depth and time of onset; and	
(D) A description and results of the treatment;	(D) A description and results of the treatment;	
(ii) The evaluation for each incident based on --	(ii) The evaluation for each incident based on --	
(A) The investigation	(A) The investigation	
(B) Consideration of the past performance of the decompression table used; and	(B) Consideration of the past performance of the decompression table used: and	
(C) Individual susceptibility; and	(C) Individual susceptibility: and	
(iii) The corrective action taken, if necessary. to reduce the probability of recurrence.	(iii) The corrective action taken. if necessary, to reduce the probability of recurrence.	

Current Edition	Proposed Change	Reason or Justification
(b) The diving supervisor shall ensure that the working interval of a dive is terminated when he so directs or when --	(b) The diving supervisor shall ensure that the working interval of a dive is terminated when he so directs or when --	
(I) A diver requests termination;	(I) A diver requests termination;	
(2) A diver fails to respond correctly to communications or signals from a dive team member;	(2) A diver fails to respond correctly to communications or signals from a dive team member;	
(3) Communications are lost and can not be quickly reestablished between --	(3) Communications are lost and can not be quickly reestablished between --	
(i) The diver and a dive team member at the dive location: or	(i) The diver and a dive team member at the dive location; or	
(ii) The person-in-charge and the diving supervisor during liveboating operations; or	(ii) The person-in-charge and the diving supervisor during liveboating operations; or	
(4) A diver begins to use his diver-carried reserve breathing gas supply.	(4) A diver begins to use his diver-carried reserve breathing gas supply.	
	(IO) A lock out - tag out procedure is used on main propulsion and/or other machinery controls onboard vessels or stationary platforms engaged in diving operations to provide a warning to anyone attempting to engage or operate machinery which may be potentially hazardous to the divers safety.	This new paragraph is added to establish Lock-out/ Tag-out procedures, enhances safety. **MINIMAL FINANCIAL IMPACT**

Current Edition	Proposed Change	Reason or Justification
197.430 SCUBA DIVING. The diving supervisor shall insure that -- (a) SCUBA diving is not conducted -- (1) Outside the no-decompression limits; (2) At depths greater than 130 fsw; **(3)** Against currents greater than one (1) knot unless line-tended; and (4) If a diver cannot directly ascend to the surface unless line-tended; (b) The SCUBA diver has the equipment required by 197.346(a); (c) A standby diver is available while a diver is in the water; (d) A diver is line-tended from the surface or accompanied by another diver in the water in continuous visual contact during the diving operation; (e) When a diver is in a physically confining space, another diver is stationed at the underwater point of entry and is line-tending the diver; and (f) A boat is available for diver pickup when the divers are not line-tended from the dive location	**197.430 SCUBA DIVING.** The diving supervisor shall insure that -- (a) SCUBA diving is not conducted -- (I) Outside the no-decompression limits; (2) At depths greater than 130 fsw; (3) Against currents greater than one (I) knot unless line-tended: and (4) If a diver cannot directly ascend to the surface; (5) in a physically confining space (b) The SCUBA diver has the equipment required by 197.346(a); (c) A standby diver is available while a diver is in the water; (d) A diver is line-tended from the surface or accompanied by another diver in the water in continuous visual contact during the diving operation; (e) A boat is available for diver pickup when the divers are not line-tended from the dive location.	This paragraph is added to increase diver safety **NO FINANCIAL IMPACT. <u>CONSISTENT WITH INDUSTRY PRACTICE</u>.** (e) is deleted as addition of (a)(5) prohibits this type of diving. (f) is now made (e). **NO FINANCIAL IMPACT**

Current Edition	Proposed Change	Reason or Justification
197.432 SURFACE-SUPPLIED AIR DIVING.	**197.432 SURFACE-SUPPLIED AIR DIVING.**	
The diving supervisor shall insure that --	The diving supervisor shall insure that --	
(a) Surface-supplied air diving is conducted at depths less than 190 fsw. except that dives with bottom times of 30 minutes or less may be conducted to depths of 220 fsw:	(a) Surface-supplied air diving is conducted at depths less than 190 fsw, except that dives with bottom times of 30 minutes or less may be conducted to depths of 220 fsw;	
(b) Each diving operation has a primary breathing gas supply;	(b) Each diving operation has a primary breathing gas supply;	
	(c) Each diving operation has a secondary breathing gas supply.	This is requirement is moved here to include all diving. **NO FINANCIAL IMPACT.**
(c) Each diver is continuously tended while in the water;	(d) Each diver is continuously tended by a separate dive team member while in the water;	(c)becomes (d) and (e)(5) is incorporated to make it all inclusive. **NO FINANCIAL IMPACT.**
(d) When a diver is in a physically confining space, another diver is stationed at the underwater point of entry and is line-tending the diver;	(e) When a diver is in a physically confining space, another diver is stationed at the underwater point of entry and is line-tending the diver:	(d) becomes(e) and(e) to(f) with also a change of the depth from **130** FSW to **SO. MINIMAL FINANCIAL IMPACT.** CONSISTENT WITH SAFE INDUSTRY PRACTICE.
(e) For dives deeper than 130 fsw or outside the no-decompression limits --	(f) For dives deeper than 80 FSW or outside the no-decompression limits --	
(I) Each diving operation has a secondary breathing gas supply;	(I) A decompression chamber is ready for use at the dive location;	(I) is deleted as it is covered in (c) above. (2) becomes (1) etc. **NO FINANCIAL IMPACT.**
(2) A decompression chamber is ready for use at the dive location;	(2) A diving stage is available to enter or exit the water from the dive location and for in-water decompression if the diver is (i)wearing heavyweight diving outfit or (ii)diving on a decompression table requiring in-water decompression. except when a bell is provided: or (iii)exposed to an air gap of greater than 15 feet: or (iv)where conditions or crew sire prohibits the recovery of the diver to the dive station, and	This section added for clarity, promotes safety **NO FINANCIAL IMPACT**
(3) A diving stage is used except when a bell is provided;		
(4) A bell is used for dives with an in-water decompression time greater than 120 minutes. except when the diver is using a heavyweight diving outfit or is diving in a physically confining space:	(3) A bell is used for dives with an in-water decompression time greater than 100 minutes. except when the diver is using a heavy-weight diving outfit or is diving in a physically confining space;	Consistant with ADC Standards. **MINIMAL FINANCIAL IMPACT** AS DISCUSSED HERETOFORE.
(5) A separate dive team member tends each diver in the water:		

Current Edition	Proposed Change	Reason or Justification
(6) A standby diver is available while a diver is in the water: and	(4) A standby diver is on station, suitably dressed and prepared to dive while a diver is in the water; and	Responsibilities and requirements for the standy diver are better defined with the change of wording of the old (6)
(7) Each diver has a diver-carried reserve breathing gas supply except when using a heavy-weight diving outfit or when diving in a physically confining space; and	(5) Each diver has a diver-carried reserve breathing gas supply except when using a heavy-weight diving outfit: and	Exception for diving in confined space is removed as there is no viable reason for exempting it. *Refer to the proposed definitionof confined space.*
(f) the surface-supplied air diver has the equipment required by 197.346 (b) or(d).	(f) the surface-supplied air diver has the equipment required by 197.346 (b) or(d).	

Current Edition	Proposed Change	Reason or Justification
197.434 SURFACE-SUPPLIED MIXED-GAS DIVING.	**197.434 SURFACE-SUPPLIED MIXED-GAS DIVING.**	
The diving supervisor shall insure that --	The diving supervisor shall insure that --	
(a) When mixed-gas diving is conducted. a decompression chamber or a closed bell meeting the requirements of 197.332 is ready for use at the dive location;	(a) When mixed-gas diving is conducted. a decompression chamber or a closed bell meeting the requirements of 197.332 is ready for use at the dive location;	
(b) A diving stage is used except when a bell is provided;	(b) A diving stage is used except when a bell is provided;	
(c) A bell is used for dives deeper than 220 fsw or when the dive involves in-water decompression times greater than 120 minutes, except when the diver is using a heavyweight diving outfit or is diving in a physically confining space;	(c) A bell is used for dives deeper than 220 fsw or when the dive involves in-water decompression times greater than 100 minutes,	(c)Change of 120 minutes to 100 minutes consistant with ADC Standards. **NO FINANCIAL IMPACT.** Exception for diving with heavyweight gear or when diving in a physically confining space is deleted.
(d) A closed bell is used for dives at depths greater than 300 fsw, except when diving is conducted in a physically confining space;	(d) A closed bell is used for dives at depths greater than 300 fsw.	Exception for diving in a physically confining space is deleted.
(e) A separate dive team member tends each diver in the water;	(e) A separate dive team member continuously tends each diver in the water:	Word ***continuously*** is added. promotes safety by prohibiting other duties. NO **FINANCIAL IMPACT.**
(f) A standby diver is available during all nonsaturation dives;	(f) A standby diver is on station, suitably dressed and prepared to divewhile the diver is in the water;	Responsibilities of standby diver is better defined with this wording.
(g) When saturation diving is conducted -- (1) A standby diver is available when the closed bell leaves the dive location until the divers are in saturation; and	(g) When saturation diving is conducted -- (I) A standby diver is available when the closed bell leaves the dive location until the divers are in saturation: and	
(2) A member of the dive team at the dive location is a diver able to assist in the recovery of the closed bell or its occupants. if required:	(2) A member of the dive team at the dive location is a diver able to assist in the recovery of the closed bell or its occupants. if required;	
(h) When closed bell operations are conducted. a diver is available in the closed bell to assist a diver in the water:	(h) When closed bell operations are conducted, a diver is available in the closed bell to assist a diver in the water:	

Current Edition	Proposed Change	R
) When a dive s in a phys ıy ıother diver is ationed at un ıtry an is line nding the r;	(i) When a diver is in a physically another diver is stationed at the un entry an is line-tending the diver;	an
) Each diving eration ha ɔri condary breat ng gas sup me quirements of 97.340; ai	(j) Each diving operation has a pri secondary breathing gas supply m requirements of 197.340; and	**NO FINANCIAL IMPACT**
(k) the surface-supplied mixed-gas diver has equipment required by 197.346 (b) or (d).	(k) the surface-supplied mixed-gas diver has the equipment required by 197.346 (b) or (d).	

Current Edition	Proposed Change	Reason or Justification
197.435 Bell Bounce and Saturation Diving	197.435 Bell Bounce and Saturation Diving	
New section. not currently a paragraph	(a) When closed bell diving operations are conducted. (1) A member of the diver team at the dive location is a diver able to assist in the recovery of the closed bell or its occupants if required. (b) Bell bounce and saturation diving shall be conducted utilizing PVHO's fitted as per 197.328 197.330 & 332. (c) Each diving operation from a closed bell shall; (1) have a primary and secondary breathing gas supply meeting the requirements of 197.340 (2) have a diver in the bell equipped to assist the diver in the water. (3) have mixed gas divers equipped as required by 197.346.	This section to cover the specific requirements of this mode of diving. NO FINANCIAL IMPACT. CONSISTENT WITH INDUSTRY PRACTICE.

Current Edition	Proposed Change	Reason or Justification
197.436 LIVEBOATING.	**197.436 LIVEBOATING.**	
(a) During liveboating operations, the person-in-charge shall insure that --	(a) During liveboating operations. the person-in-charge shall insure that --	
(1) Diving is not conducted in seas that impede station-keeping ability of the vessel;	(1) Diving is not conducted in seas that impede station-keeping ability of the vessel:	
(2) Livcboating operations are not conducted --	(2) Liveboating operations arc not conducted --	
(i) From I hour after sunset to 1 hour before sunrise; or	(i) From 1 hour after sunset to I hour before sunrise: or	
(ii) During periods of restricted visibility;	(ii) During periods of restricted visibility:	
(3) The propellers of the vessel are stopped before the diver enters or exits the water; and	(3) The propellers of the vessel are stopped before the diver enters or exits the water; and	
(4) A boat is ready to be launched with crew in the event of an emergency.	(4) A boat is ready to be launched with crew in the event of an emergency.	
(b) As used in paragraph (a)(2)(ii) of this section, "restricted visibility" means any condition in which vessel navigational visibility is restricted by fog, mist, falling snow, heavy rainstorms, sandstorms or any other similar causes.		Paragraph(b) is removed as it belongs in definitions thus making(c) **(b) etc. see Restricted Visibility**
(c) During liveboating operations, the diving supervisor shall insure that --	(b) During liveboating operations, the diving supervisor shall insure that --	
(1) Diving is not conducted at depths greater than 220 fsw:	(I) Diving is not conducted at depths greater than 220 fsw;	
(2) Diving is not conducted in seas that impede diver mobility or work function:	(2) Diving is not conducted in seas that impede diver mobility or work function:	
(3) A means is used to prevent the diver's hose from entangling in the propellers of the vessel:	(3) A means is used to prevent the diver's hose from entangling in the propellers of the vessel;	

Current Edition	Proposed Change	Reason or Justification
(4) Each diver carries a reserve breathing gas supply;	(4) Each diver carries a reserve breathing gas supply:	
(5) A standby diver is available while a diver is in the water;	(5) A standby diver is on station, suitably dressed and prepared to dive while a diver is in the water;	Responsibilities and definition of standby dive better defined. **NO FINANCIAL IMPACT.**
(6) Diving is not conducted with in-water decompression times greater than 120 minutes; and	(6) Diving is not conducted with in-water decompression times greater than 100 minutes; and	Time is changed from 120 to 100 minutes per ADC Standards. **NO FINANCIAL IMPACT.** **CONSISTENT WITH INDUSTRY PRACTICE.**
(7) The person-in-charge is notified before a diver enters or exits the water.	(7) The person-in-charge is notified before a diver enters or exits the water.	
	(8) A means of direct voice communication is available between the dive station and the person in control of maneuvering the vessel,	Paragraphs (8) and (9) are added to enhance the protection to the diver. (10) defines a standard industry practice.
	(9) A kill switch is immediately available to the person in control of maneuvering the vessel, for immediate shutdown of the engines.	**MINIMAL FINANCIAL IMPACT**
	(10) A decompression buoy may be used in place of a diving stage to support in-water decompression so long as a suitable means exists for the diver to enter or exit the water as required by 197.320	**MINIMAL FINANCIAL IMPACT**

Current Edition	Proposed Change	Reason or Justification
197.438 Working with Remote Operated Vehicles (R.O.V.'s)	**197.438 Working with Remote Operated Vehicles (R.O.V.'s)**	
New section. not currently a paragraph.	a,) Before commencements of any joint ROV/Diving operations. a clear chain of command must be established. b.) All ROV operations conducted concurrent with diving operations shall be coordinated through the Diving Supervisor. c.) Two way voice communications shall be available between the ROV pilot & the dive control station. d.) All ROV movements are to be cleared through the Diving Supervisor while a diver is in the water. e.) ROV thrusters are to be fitted with guards. f.) Reference to Chapter 3 Section VI ADC Consensus Standards for Commercial Dive Operations.	The advent of the ROV and the increasing frequency of joint operations since the publishing of 197 have necessitated the inclusion of this paragraph in order to define responsibilities. **NO FINANCIAL IMPACT. <u>CONSISTENT WITH INDUSTRY PRACTICE</u>.**

Current Edition	Proposed Change	
197.440 Diving from a Dynamically Vessel	**197.440 Diving from a Dynamically Vessel**	
New section, not currently a paragraph.	Di dynami co accord St comm 6.(	Increased f que of original pu cat of I be address(N 'IN **CONSIST NT TH**

Current Edition	Proposed Change	Reason or Justification
197.450 BREATHING GAS TESTS.	197.450 BREATHING GAS TESTS.	
The diving supervisor shall insure that --	The diving supervisor shall insure that --	
(a) The output of each air compressor is tested and meets the requirements of 197.340 for quality and quantity by means of samples taken at the connection point to the distribution system --	(a) The output of each air compressor is tested and meets the requirements of 197.340 for quality and quantity by means of samples taken at the connection point to the distribution system --	
(I) Every 6 months; and	(1) Every 6 months; and	
(2) After every repair or modification,	(2) After every repair or modification.	
(b) Purchased supplies ofbreathing mixtures supplied to a diver are checked before being placed on line for	(b) Purchased supplies of breathing mixtures supplied to a diver are checked before being placed on line for	
(1) Certification that the supply meets the requirements of 197.340; and	(1) Certification that the supply meets the requirements of 197.340; and	
(2) Noxious or offensive odor and oxygen percentage;	(2) Noxious or offensive odor and oxygen percentage;	
(c) Each breathing supply system is checked, prior to commencement of diving operations, at the umbilical or underwater breathing apparatus connection point for the diver, for noxious or offensive odor and presence of oil mist: and	(c) Each breathing supply system is checked, prior to commencement of diving operations, at the umbilical or underwater breathing apparatus connection point for the diver, for noxious or offensive odor and presence of foreign material; and	"Oil mist" is changed to *foreign material* to be all encompassing. NO FINANCIAL IMPACT.
(d) Each breathing supply system, supplying mixed-gas to a diver, is checked. prior to commencement of diving operations. at the umbilical or underwater breathing apparatus connection point for the diver, for percentage of oxygen.	(df Each breathing supply system, supplying mixed-gas to a diver. is checked. prior to commencement of diving operations, at the umbilical or underwater breathing apparatus connection point for the diver, for percentage of oxygen.	

Current Edition

197.454 FIRST AID AND TREATMENT EQUIPMENT.

The diving supervisor shall ensure that medical kits are checked monthly to insure that all required supplies are present.

Proposed Change

197.454 FIRST AID AND TREATMENT EQUIPMENT.

The diving supervisor shall ensure that medical kits are checked prior to commencing diving operations to ensure that all required supplies are present.

Reason or Justification

Intent is to have necessary equipment on site. Requirement for monthly checking is not practical on call-out type work ie. not a fixed facility. Changing wording to " prior to commencing diving operations better satisfies the intent.

NO FINANCIAL IMPACT

Current Edition	Proposed Change	Reason or Justification
197.456 BREATHING SUPPLY HOSES.	**197.456 BREATHING SUPPLY HOSES.**	
(a) The diving supervisor shall insure that --	(a) The diving supervisor shall insure that --	
(I) Each breathing supply hose is pressure tested prior to being placed into initial service and every 24 months thereafter to 1.5 times its maximum working pressure:	(1) Each breathing supply hose is pressure tested prior to being placed into initial service and every 12 months thereafter hydrostatically to 1.5 times its maximum working pressure;	The time is changed as the current requirement for 24 month in-service testing is too lax, and addition of requirement that test be hydrostatic is for safety. 197.462 calls for testing of piping every 12 months yet this current wording only requires hoses, which are more subject to failure, to be tested every 24 months. **NO FINANCIAL IMPACT. CONSISTENT WITH INDUSTRY PRACTICE.**
(2) Each breathing supply hose assembly, prior to being placed into initial service and after any repair, modification, or alteration, is tensile tested by --	(2) Each breathing supply hose assembly. prior to being placed into initial service and after any repair, modification, or alteration. is tensile tested by --	
(i) Subjecting each hose-to-fitting connection to a 200 pound axial load; and	(if Subjecting each hose-to-fitting connection to a 200 pound axial load, and	
(ii) Passing a visual examination for evidence of separation, slippage. or other damage to the assembly;	(ii) Passing a visual examination for evidence of separation, slippage, or other damage to the assembly;	
(3) Each breathing supply hose is periodically checked for --	(3) Each breathing supply hose is periodically checked for --	
(i) Damage which is likely to affect pressure integrity; and	(i) Damage which is likely to affect pressure integrity; and	
(ii) Contamination which is likely to affect the purity of the breathing mixture delivered to the diver; and	(ii) Contamination which is likely to affect the purity of the breathing mixture delivered to the diver; and	
(4) The open ends of each breathing supply hose are taped, capped, or plugged when not in use.	(4) The open ends of each breathing supply hose are taped, capped, or plugged when not in use.	
(b) To meet the requirements ofparagraph (a)(3) of this section. each breathing supply hose must bc --	(b) To meet the requirements of paragraph (a)(3) of this section. each breathing supply hose must be --	
(I) Carefully inspected before being shipped to the dive location;	(I) Pressure tested to its normal working pressure prior to commencing diving operations.	Possibility of damage during shipping and handling. there is a need for inspection and assurance that the hose is fit for service at the dive sire. after all transportation and setup etc. has been accomplished. **NO FINANCIAL IMPACT. CONSISTENT WITH INDUSTRY PRACTICE.**
(2) Visually checked during daily operation: and	(2) Visually checked during daily operation: and	
(3) Checked for noxious or offensive odor before each diving operation.	(3) Checked for noxious or offensive odor before each diving operation.	
		197.462 Pressure vessels and pressure piping

Current Edition

(a) The diving supervisor shall insure that each volume tank. cylinder,PVHO, and pressure piping system has been examined and tested every 12 months and after any repair. modification, or alteration to the extent necessary to determine that they are in condition and tit for the service intended.
(b) The following tests must be made to meet the annual requirements of paragraph (a) of this section:
(I) An internal and external visual examination for mechanical damage or deterioration. If a defect is found that may impair the safety of the pressure vessel, a hydrostatic test must be performed.
(2) A leak test
(3) A Pneumatic test
(4) A hydrostatic test every fifth year instead of the pneumatic test.
(c) The following tests must be made after any repair, modification,or alteration to meeet the requirements of paragraph (a) of this section:
(1) An internal and external visual examination for correctness and adequacy of repair, modification, or alteration.
(2) A leak test.
(3) A hydrostatic test when the repair, modification, or alteration affects the pressure boundary.
(d) When the pneumatic test on pressure vessels is conducted-
(1) The test pressure must be the maximum allowable working pressure stamped on the pressure vessel: and
(2) The test may be conducted only after suitable precautions are taken to protect personnel and equipment.
(e) When the pneumatic test on pressure piping is conducted:
(I) The test pressure must be no less than 90 percent of the setting of the relief device; and
(2) The test may be conducted only after suitable precautions are taken to protect personnel and

Proposed Change

197.462 **Pressure** vessels and **pressure piping**
The diving supervisor shall insure that each volume tank, cylinder,PVHO, and pressure piping system has been examined and tested every 12 months and after any repair, modification, or alteration to the extent necessary to determine that they are in condition and fit for the service intended.
(b) The following tests must be made to meet the annual requirements of paragraph (a) of this section:
(1) An internal and external visual examination for mechanical damage or deterioration. If a defect is found that may impair the safety of the pressure vessel. a hydrostatic test must be performed.
(2) A leak test
(3) A Pneumatic test
(c)The following tests must be made after any repair, modification,or alteration to meeet the requirements of paragraph (a) of this section:
(1) An internal and external visual examination for correctness and adequacy of repair, modification, or alteration.
(2) A leak test.
(3) A hydrostatic test when the repair, modification, or alteration affects the pressure boundary.
(d) When the pneumatic test on pressure vessels is conducted-
(1) The test pressure must be the maximum allowable working pressure stamped on the pressure vessel; and
(2) The test may be conducted only after suitable precautions are taken to protect personnel and equipment.
(e) When the pneumatic test on pressure piping is conducted:
(I) The test pressure must be no less than 90 percent of the setting of the relief device: and
(2) The test may be conducted only after suitable precautions are taken to protect personnel and equipment

Reason or Justification

(4)Deletc
No advantage can be seen in consciously over-pressurizing pvho's to 1.5 times the MAWP. Without other safety requirements the opportunity exists for accidental over-pressurization.
The ASME Code only requires a hydra test at initial construction or upon any repair or alteration of the pressure boundary. *consistant with (3)*
The ANSI ASME/PVHO-1 Safety Standard has no In-service requirements.
Sub Chapter F allows for exemption from hydra testing those pressure vessels which can be visually examined internally and externally and have no defects.

BENEFICIAL FINANCIAL IMPACT

Current Edition	Proposed Change	Reason or Justification
(f)When a hydrostatic test on a pressure vessel is made, the test pressure must be: (I) 1.25 times the pressure stamped on the pressure vessel built to division 2 of the ASME Code: and (2) I .5 time the pressure stamped on pressure vessels built to division I of the ASME Code. (g) When a hydrostatic test on pressure piping is conducted, the test must be in accordance with the ANSI Code. (h) When the leak test on pressure vessels or pressure piping is conducted: (I) The test must be conducted with the breathing mixture normally used in service; (2) The test must be conducted at maximum allowable working pressure; and (3) The test pressure must be maintained for a minimum of 10 minutes to allow checking all joints, connections, and regions of high stress for leakage.	(f)When a hydrostatic test on a pressure vessel is made. the test pressure must be: (I) 1.25 times the pressure stamped on the pressure vessel built to division 2 of the ASME Code: and (2) 1.5 time the pressure stamped on pressure vessels built to division I of the ASME Code: or- (3) As required by the Code of construction (g) When a hydrostatic test on pressure piping is conducted. the test must be in accordance with the Code of construction (h) When the leak test on pressure vessels or pressure piping is conducted: (1) The test must be conducted with the breathing mixture normally used in service; (2) The test must be conducted at maximum allowable working pressure; and (3) The test pressure must be maintained for a minimum of 10 minutes to allow checking all joints, connections, and regions of high stress for leakage.	modify(f) and (g) to refer to the Code of construction. **NO FINANCIAL IMPACT**

Current Edition

197.482 LOGBOOK ENTRIES.

(a)The person-in-charge shall insure that the following information is recorded in the logbook for each commercial diving operation:

(1) Date, time, and location at the start and completion of dive operations.

(2) Approximate underwater and surface conditions (weather, visibility, temperatures, and currents).

(3) Name of the diving supervisor.

(4) General nature of work performed.

(b)The diving supervisor shall insure that the following information is recorded in the logbook for each commercial diving operation:

(1) Date. time, and location at the start and completion of dive operations.

(2) Approximate underwater and surface conditions (weather, visibility, temperatures, and currents).

(3) Names of dive team members including diving supervisor.

(4) General nature of work performed.

(5) Repetitive dive designation or elapsed time since last hyperbaric exposure if less than 24 hours for each diver.

(6) Diving modes used.

(7) Maximum depth and bottom time for each diver.

(8) Name of person-in-charge

Proposed Change

197.482 LOGBOOK ENTRIES.

(a)The person-in-charge shall insure that the following information is recorded in the logbook for each commercial diving operation:

(1) Date. time. and location at the start and completion of dive operations.

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(b)The diving supervisor shall insure that the following information is recorded in the logbook for each commercial diving operation:

(I) Date, time, and location at the start and completion of dive operations.

(2) Approximate underwater and surface conditions (weather, visibility, temperatures, and currents).

(3) Names of dive team members including diving supervisor.

(4) General nature of work performed

(5) Repetitive dive designation or elapsed time since last hyperbaric exposure if less than 24 hours for each diver.

(6) Diving modes used.

(7) Maximum depth and bottom time for each diver.

(8) Name of person-in-charge

Reason or Justification

No changes to this section on this page.

NO FINANCIAL IMPACT