DEPARTMENT OF HOMELAND SECURITY

Coast Guard

46 CFR Parts 8 and 197

[Docket No. USCG–1998–3786]

RIN 1625–AA21

Commercial Diving Operations

AGENCY: Coast Guard, DHS.

ACTION: Notice of proposed rulemaking.

SUMMARY: The Coast Guard proposes to amend its regulations for commercial diving that is conducted from deepwater ports or deepwater port safety zones, or in connection with Outer Continental Shelf (OCS) activities, or from vessels that are required to have a Coast Guard certificate of inspection. The regulations would be revised and updated to improve safety and to reflect current industry best practices. The proposed regulations would also allow the Coast Guard to approve independent third-party organizations to assist with ensuring regulatory compliance of commercial diving regulations. The proposed amendments promote the Coast Guard's maritime safety mission.

DATES: Comments and related material must either be submitted to our online docket via *http://www.regulations.gov* on or before May 20, 2015 or reach the Docket Management Facility by that date. Comments sent to the Office of Management and Budget (OMB) on collection of information must reach OMB on or before May 20, 2015.

ADDRESSES: Submit comments using *one* of the listed methods, and see **SUPPLEMENTARY INFORMATION** for more information on public comments.

- *Online—http://www.regulations.gov* following Web site instructions.
- *Fax*—202–493–2251.
- *Mail*—Docket Management Facility (M–30), U.S. Department of Transportation, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590–0001.
- *Hand deliver—mail* address, 9 a.m. to 5 p.m., Monday through Friday, except Federal holidays (telephone 202–366–9329).

Collection of information. You must submit comments on the collection of information discussed in section IX.D of this preamble both to the Coast Guard's docket and to the Office of Information and Regulatory Affairs (OIRA) in the White House Office of Management and Budget. OIRA submissions can use one of the listed methods.

- *Email* (preferred)—*oira_submission@omb.eop.gov* (include the docket number and ''Attention: Desk Officer for Coast Guard, DHS'' in the subject line of the email).
- *Fax*—202–395–6566.
- *Mail*—Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street NW., Washington, DC 20503, ATTN: Desk Officer, U.S. Coast Guard.

Viewing material proposed for incorporation by reference. Make arrangements to view this material by calling the Coast Guard's Office of Regulations and Administrative Law at 202–372–3870 or by emailing *HQS-SMB-CoastGuardRegulationsLaw@uscg.mil.*

FOR FURTHER INFORMATION CONTACT: If you have questions on this proposed rule, call or email Mr. Ken Smith, Project Manager, U.S. Coast Guard, Headquarters, Vessel and Facility Operating Standards Division, Commandant (CG–OES–2); telephone 202–372–1413, email *Ken.A.Smith@uscg.mil.* If you have questions on viewing or submitting material to the docket, call Cheryl Collins, Program Manager, Docket Operations, telephone 202–366–9826.

SUPPLEMENTARY INFORMATION:

Table of Contents for Preamble

I. Public Participation and Comments

We encourage you to submit comments (or related material) on this rulemaking. We will consider all submissions and may adjust our final action based on your comments. Comments should be marked with docket number USCG–1998–3786, and should provide a reason for each suggestion or recommendation. You should provide personal contact information so that we can contact you if we have questions regarding your comments; but please note that all comments will be posted to the online docket without change and that any personal information you include can be searchable online (see the **Federal Register** Privacy Act notice regarding our public dockets, 73 FR 3316, Jan. 17, 2008).

Mailed or hand-delivered comments should be in an unbound 8½ x 11 inch format suitable for reproduction. The Docket Management Facility will acknowledge receipt of mailed comments if you enclose a stamped, self-addressed postcard or envelope with your submission. Documents mentioned in this notice, and all public comments, are in our online docket at *http://www.regulations.gov* and can be viewed by following the Web site's instructions. You can also view the docket at the Docket Management Facility (see the mailing address under **ADDRESSES**) between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

We are not planning to hold a public meeting but will consider doing so if public comments indicate a meeting would be helpful. We would issue a separate **Federal Register** notice to announce the date, time, and location of such a meeting.

II. Abbreviations

ACDE Association of Commercial Diving Educators
ADCI Association of Diving Contractors International
ANPRM Advance notice of proposed rulemaking
ANSI American National Standards Institute
ASME American Society of Mechanical Engineers
CDO Commercial Diving Operator
CFR Code of Federal Regulations
CG Coast Guard
DHS Department of Homeland Security
DMT Diving medical technician
FR Federal Register
IMO International Maritime Organization
MISLE Marine Information for Safety and Law Enforcement
NAICS North American Industry Classification System
NOSAC National Offshore Safety Advisory Committee
NPRM Notice of proposed rulemaking
OCMI Officer in Charge, Marine Inspection
OCS Outer Continental Shelf
OMB Office of Management and Budget
OSHA Occupational Safety and Health Administration
Psi (g) Pounds per square inch (gauge)
RA Regulatory Analysis
SCUBA Self-contained underwater breathing apparatus
§ Section symbol
TPO Third-party organization
U.S.C. United States Code

III. Basis and Purpose

The legal basis for this notice of proposed rulemaking (NPRM) is 33 U.S.C. 1509(b), which requires safety regulations for deepwater ports; 43 U.S.C. 1333(d)(1), which permits safety regulations for Outer Continental Shelf (OCS) facilities and their equipment; 46 U.S.C. 3306, which requires regulations to implement subtitle II of Title 46 of the U.S. Code with respect to inspected vessels, including offshore supply vessels and their equipment; 46 U.S.C. 3703, which requires safety and environmental protection regulations for liquid bulk dangerous cargo carriers and their equipment, to be issued after consultation with Federal, State, and local governments and with private sector entities (we specifically request interested government agencies and private sector entities to comment on this NPRM); and 46 U.S.C. 6101, which requires regulations for reporting and investigating marine casualties. The Secretary of Homeland Security's authority under all of these statutes has been delegated to the Commandant of the Coast Guard by Department of Homeland Security Delegation No. 0170.1, para. II (75), (90), and (92).

The purpose of the NPRM is to propose revisions and updates to our existing commercial diving regulations, to improve safety, to reflect current industry best practices, and to facilitate the use of approved third-party organizations to ensure regulatory compliance.

IV. Background

History. The Coast Guard issued commercial diving operation regulations (found at 46 CFR part 197, subpart B), in 1978. Generally, the regulations apply to commercial operations conducted from deepwater ports (such as offshore liquefied natural gas facilities), or as a part of OCS activities, or from vessels that are required to have a Coast Guard certificate of inspection.[1] Commercial diving operations conducted near shore or in U.S. internal waters from a vessel not required to have a Coast Guard certificate of inspection are not covered by Coast Guard regulations, but are regulated by the Occupational Safety and Health Administration (OSHA).[2]

We began this rulemaking in 1994 at the request of an industry group now known as the Association of Diving Contractors International (ADCI). Among other recommendations for updating our 1978 regulations, ADCI suggested the Coast Guard incorporate its consensus standards into regulation. We issued our first advance notice of proposed rulemaking (ANPRM) in 1998 [3] and noted that our regulations were then already 20 years old and did not reflect the latest safety and technology standards and industry best practices. In 2009, a second ANPRM [4] discussed in detail the public comments we received for the 1998 ANPRM, recounted the early history of the rulemaking, and summarized developments between 1998 and 2009. The public comments received on the 1998 ANPRM revealed a deep split of opinion as to which industry group's standards should be incorporated in our regulations. Our position in the 2009 ANPRM was to encourage continued industry interest in this rulemaking and to solicit a new round of public comments.

Recommendations to the Coast Guard. We are aware of continuing issues such as proper dive manning, drill, medical and audit practices/requirements among others, that have continued to be evident in the industry. Consequently, in this NPRM, we propose a complete revision of the commercial diving operation regulations in 46 CFR part 197, subpart B. In doing so, we are mindful of the recommendations made in the Coast Guard's 1996 formal investigation report into a commercial diving fatality involving Cliff's Drilling Rig No. 12 (''the Rig 12 report''), and of recommendations made in 2008 and 2012 by the Diving Subcommittee of the National Offshore Safety Advisory Committee (''the NOSAC report''). (NOSAC is a Federal advisory committee that advises the Coast Guard on matters related to operations and safety on the OCS.) All recommendations in the reports discussed above are available in the online docket at *http://www.regulations.gov*.

The Rig 12 report recommended new requirements for additional safety equipment, standby divers, equipment maintenance records, and pre-dive planning. This NPRM proposes many of these measures. The Rig 12 report also recommended against delegating Coast Guard dive safety enforcement duties to third-parties. Although this NPRM proposes the use of independent third-party auditors, their proposed use is intended to leverage industry expertise and capabilities, and provide a framework for Coast Guard enforcement, not to relieve us of our regulatory responsibilities. Therefore, we do not regard the use of third-party organizations as being contrary to the Rig 12 report recommendation.

The 2008 NOSAC report to the Coast Guard [5] noted that two industry groups, ADCI and the International Marine Contractors Association, had published standards that were more up to date than our regulations. The 2008 NOSAC report's major recommendations included avoiding overly-prescriptive requirements that might stifle innovation in diving safety, developing specific requirements for each diving mode, and setting training requirements that balance practical experience with classroom instruction. To implement those major recommendations, we concluded that it would be better to completely revise our regulations instead of making the section-by-section changes NOSAC suggested.

The 2008 NOSAC report found that audits would be ''of great benefit'' but ''should be developed, implemented, and performed by industry in order to ensure full consideration of the operation in that geographical area.'' We encourage industry to conduct its own audits, this NPRM proposes the use of Coast Guard-approved third-party organizations subject to Coast Guard approval and oversight. In determining whether to approve a third-party organization, we would take into account the organization's ability to understand operating conditions within specific geographical areas.

NOSAC also recommended in 2008 against recognizing self-contained underwater breathing apparatus (SCUBA) diving as an offshore commercial diving application. However, our discussions with members of the commercial diving industry and knowledge of known commercial diving activities indicates that this mode of diving continues to be used in some commercial diving operations, especially in shallow water. Since we are aware that SCUBA continues to be used in commercial diving activities regulated by the Coast Guard, we believe SCUBA diving should continue to be addressed in our commercial diving regulations in order to maintain established minimum safety standards for that mode of diving.

In November 2009, NOSAC issued a report to the Coast Guard voicing concerns about the evacuation and medical treatment of injured workers from remote OCS facilities. Recognizing the importance of this matter, we asked NOSAC to reestablish the subcommittee

[1] 46 CFR 197.202.

[2] 29 CFR 1910.401–1910.441, 1915.6.

[3] 63 FR 34840 (Jun. 26, 1998).

[4] 74 FR 414 (Jan. 6, 2009).

[5] ''NOSAC Diving Subcommittee 46 CFR 197 Sub Part B General Revision Recommendations,'' Apr. 18, 2008.

on commercial diving operations to review and assess the various issues and challenges associated with providing timely medical attention and treatment to divers who become ill or are injured while working subsea/under pressures at remote OCS facilities or from the vessels servicing them. We asked the subcommittee to review and assess present capabilities, practices, and procedures for medical treatments and evacuations for injured divers to shore treatment facilities from offshore facilities, including industry and government agency resources and capabilities. We also asked the subcommittee to prepare a final report for NOSAC's review and approval, recommending how to alleviate the issues and problems associated with medical treatment or evacuation of injured divers from remote OCS facilities. On May 8, 2012, NOSAC made their final report to us, containing the following recommendations concerning commercial diving operations:

1. Require a certified diver medical technician on each surface-supplied and saturation diving operation taking place on the Outer Continental Shelf in the Gulf of Mexico;

2. Ensure that the certified diver medical technician in a saturation diving operation shall have saturation diving certification and experience;

3. Ensure that the certified diver medical technician in a surface diving operation shall have surface diving certification and experience; and

4. Ensure a detailed emergency action plan is in place for medical trauma or barotrauma related injuries for each diving operation. Environmental parameters, equipment, personnel, onboard medical supplies for remote operations and logistics should also be considered.

Our NPRM addresses these recommendations, except that we believe that certified diver medical technicians may only be necessary for saturated diving operations, which would be in keeping with current U.S. industry practices. Presently, the commercial diving industry is required to have at least one diver medical technician on all saturation diving projects, in accordance with the 6th edition of the Association of Diving Contractors, ''International Standards for Commercial Diving and Underwater Operations.'' Additionally, as part of adopting this industry standard for saturated diving operations, we would require an emergency evacuation system to help ensure that divers undergoing hyperbaric treatment can be safely removed in the event of an emergency.

V. Discussion of Comments on 2009 ANPRM

Comments received during the public comment period. The 2009 ANPRM specifically requested comment on six topics: (1) the possible regulatory adoption of industry standards, (2) the use of third-party organizations (TPOs) to conduct regulatory compliance audits, (3) compliance documentation, (4) recommendations made by the Rig 12 report, (5) regulatory priorities, and (6) regulatory costs and benefits. We received comments from seven individuals or associations during the public comment period and, for the most part, the seven did not explicitly address the six topics we requested.

One commenter asked if certain other organizations had posted comments and, if so, how to view their comments. Only one of the organizations mentioned by this commenter submitted a comment and it had already been posted online at *http://www.regulations.gov.* A second commenter asked the Coast Guard to regulate SCUBA diving for the commercial harvesting of coral in Hawaii. Coral harvesting is a form of commercial fishing and, as such, it is not covered by either our current or our proposed regulations, except when conducted from a Coast Guard-inspected vessel (most commercial fishing vessels are uninspected). Another commenter asked us to extend our commercial diving regulations to all marine assistance towing and salvage industry vessels. Proposals to extend the applicability of the commercial diving regulations to vessels or operations that are not now covered by those regulations are beyond the scope of this rulemaking.

The fourth commenter expressed support for the use of TPOs to help provide a consistent level of compliance auditing. We agree with this comment, and third-party auditing is a central concept of this NPRM.

The fifth commenter said that visual inspection of diver helmets is sufficient and that a requirement for annual helmet inspection only imposes unnecessary cost. Our review of commercial diving casualty data indicates that visual inspections are not enough to ensure that a helmet can be used safely in the hazardous conditions for which it is designed. We propose that helmets, as well as all other essential diving equipment, be inspected, maintained, and serviced in accordance with the manufacturer's instructions.

The sixth commenter, an association, noted its participation in developing NOSAC's 2008 recommendations for improving our commercial diving regulations, and confirmed its ongoing interest in improving safety and efficiency. This comment requires no substantive response.

The final commenter made 15 specific recommendations. In general, the recommendations dealt with safety equipment maintenance and repair guidelines and documentation, and with training requirements for safety equipment technicians and users. We believe our proposals align with the intent of those recommendations. The commenter also recommended specific reporting and chain of custody requirements for equipment involved in diving fatalities. In the event of a marine casualty or a serious marine incident, this NPRM proposes requiring the commercial diving operator (CDO) to suspend the commercial diving operation, take action to protect the safety of life and the environment, and resume the operation only after all commercial diving employees have fully complied with the reporting requirements of 46 CFR part 4. Additionally, the CDO would be required to analyze the event and take all reasonable action required to prevent further events from occurring, arrange for a timely post-casualty audit, and ensure that any equipment that may have contributed to the event is immediately removed from service and secured against unauthorized access and any change in its material condition. This NPRM also proposes requiring most diving equipment to carry a serial number or other unique identifier to aid in recording equipment maintenance and to facilitate casualty investigations. Finally, the commenter recommended standardizing training for Coast Guard regulatory compliance personnel. In lieu of standardizing training for Coast Guard regulatory compliance personnel, this NPRM would augment Coast Guard enforcement activities through the use of TPOs to provide another method for improving regulatory compliance. We invite the commenter to consider whether our NPRM proposals adequately address the concerns and to comment on those proposals.

Late comments. We also received six comments after the close of the public comment period.

The first late commenter said we should license all dive supervisors and life support technicians, that licensed supervisors and technicians should not be removed during diving operations except at their own request or for cause, and that we should make unannounced dive site inspections. We do not have authority to license commercial divers

or dive support personnel at this time. However, in this NPRM, we propose requiring commercial diving personnel to have the knowledge, skills, experience, and certification necessary to perform their assigned duties. Many of the desirable outcomes of a Coast Guard licensing program would be provided for by completing the training and experience requirements defined in this NPRM. We would enforce compliance through documentation requirements, inspections, and third-party audits. This commenter also recommended United States and British coordination of dive personnel requirements. We believe our incorporation of the international dive standards of ADCI and of International Maritime Organization (IMO) Assembly Resolution A.831(19), the International Code of Safety for Diving Systems, meets the intent of the commenter.

The other late commenters all suggested minimum dive team size and composition requirements. This NPRM reflects many of those suggestions and we are interested in hearing from the public as to whether our proposed minimum requirements are appropriate.

VI. Discussion of Proposed Rule

We propose revising the 1978 commercial diving regulations in subpart B of 46 CFR part 197 (Marine Occupational Safety and Health Standards, General Provisions). The scope of diving operations affected by these regulations would not change, and affected diving operators would still be able to substitute alternative measures, standards, or equipment if those can be shown to provide an equivalent level of safety. However, we would replace most of the regulations that impose specific operational, personnel, and equipment requirements with new regulations that draw on industry's best practices incorporated in ADCI's current consensus standards. We would also incorporate ADCI's commercial diver training requirements which are based in part on the consensus standards of the Association of Commercial Diving Educators (ACDE). Our proposed regulatory language does not duplicate all the provisions of either the ADCI or ACDE standards, but instead adapts them to create a new regulatory baseline. Affected diving operations would have to comply with that baseline, but where they can use practices that provide greater safety than our baseline, we encourage them to voluntarily do so.

The 2009 ANPRM[6] discussed our preference for using ''regulations as a tool to encourage compliance, before injuries or deaths occur, rather than as a way of punishing violators in the wake of a tragedy.'' Currently, the enforcement of commercial diving regulations is governed by the general civil and criminal penalty procedures found in 33 CFR subpart 1.07, and on the authority to initiate personnel actions against licensed mariners authorized under 46 CFR subchapter A (Procedures Applicable to the Public). We will retain these tools but believe they, alone, are inadequate to prevent accidents from happening. Therefore, this NPRM focuses on proactively promoting and supporting appropriate administrative, operational, and auditing environments to ensure or improve safety. Under our proposals, commercial diving operators would have to provide additional compliance documentation. Coast Guard personnel or approved TPOs would be authorized to inspect operator records, observe diving operations, and interview an operator's employees.

In some diving accidents, the dive team has been so small that it was unable to respond to the emergency or retrieve a disabled diver in time to avoid a serious injury or death. Often, a single dive team member holds multiple duties (for example serving as both the dive supervisor and as a standby diver). This NPRM proposes new minimum standards for the size and composition of dive teams. We also propose prohibiting standby divers from having multiple duties that could interfere with their ability to focus on their primary role or respond adequately to an emergency. These proposals are based on manning levels adopted by the ADCI and the International Association of Oil and Gas Producers. They are minimum levels for safe team operation in the emergency conditions that can readily arise in a dynamic operating environment.

We propose requiring U.S. inspected vessels conducting commercial diving operations in any waters and foreign vessels conducting diving operations on the U.S. Outer Continental Shelf to meet the IMO's International Code of Safety for Diving Systems.[7] This will help ensure that diving systems are designed, constructed, and surveyed in accordance with an accepted international standard. A diving system safety certificate would provide evidence of compliance. This certificate would be issued to a U.S. vessel by a recognized classification society; a foreign vessel's certificate would be issued by its flag state or their delegated authority.

Finally, we propose using TPOs to audit CDOs and determine, on our behalf, whether or not those CDOs are in compliance with our regulations. Our proposed use of TPOs to perform delegated regulatory oversight functions is similar to our longstanding use of recognized classification societies to perform delegated Coast Guard vessel inspection and certification functions, as described in 46 CFR part 8 subpart B. These arrangements enable the Coast Guard to make use of a commercial organization's trained personnel and resources. However, the Coast Guard specifically seeks public input on the following question: What merits and drawbacks can be associated with the proposed use of third parties acting on behalf of the Coast Guard to conduct audits of commercial diving operations?

Table 1 shows how the content of the current commercial diving regulations would be affected by this NPRM. Table 2 provides details about specific sections in the proposed regulations.

TABLE 1—TREATMENT OF CURRENT 46 CFR PART 197 SUBPART B SUBJECT MATTER IN PROPOSED REGULATIONS

Current 46 CFR part 197 subpart B	Proposed 46 CFR part 197 subpart B	Discussion
General, 197.201–197.210	General, 197.201–197.205	General provisions would be revised and reorganized with no change in substance, except for the addition of new definitions. Current 197.200 (Purpose of subpart) would be removed as unnecessary. Current 197.203 (Right of appeal) would be removed as unnecessarily duplicative of 46 CFR subpart 1.03. Current 197.208 (designation of person in charge) and 197.210 (designation of diving supervisor) would be replaced by new 197.220.
Equipment, 197.300–197.346	Equipment, 197.270–197.286	Equipment provisions would be substantively revised.

[6] 74 FR 414, 415.

[7] IMO Assembly Resolution A.831(19).

TABLE 1—TREATMENT OF CURRENT 46 CFR PART 197 SUBPART B SUBJECT MATTER IN PROPOSED REGULATIONS—Continued

Current 46 CFR part 197 subpart B	Proposed 46 CFR part 197 subpart B	Discussion
Operations, 197.400–197.420	Specific Operations, 197.260–197.267.	Operations provisions would be substantively revised.
Specific Diving Mode Procedures, 197.430–197.436.	Specific Operations, 197.260–197.267.	New provisions would be added for specific diving modes.
Periodic Tests and Inspections of Diving Equipment, 197.450–197.462.	Equipment, 197.270–197.286	Testing and inspection requirements for a specific item of equipment would appear in the section providing overall equipment requirements for that item. General testing and inspection requirements would appear under "Operational Duties" (197.220–197.225) and "Specific Operations (197.260–197.267)."
Records, 197.480–197.488	See Discussion column	Logbook requirements would appear in 197.221. Casualty record requirements would appear in 197.224.

TABLE 2—PROPOSED NEW OR AMENDED REGULATIONS, 46 CFR

46 CFR section	Proposed version	Comment on proposed version
46 CFR Part 8, Subpart C—International Convention Certificate Issuance		
8.320	Classification society authorization to issue international certificates.	Amend this section to add IMO diving system safety certificate to the list of certificates.
46 CFR Part 197, Subpart B—Commercial Diving Operations		
197.200–197.205 General		
197.200	Applicability	Add paragraph (d) concerning foreign vessels; otherwise, rewrite current 197.202 for improved clarity but without changing scope.
197.201	Definitions	Current 197.204 definitions with some revision and supplementing to reflect other proposed changes.
197.202	Incorporation by reference	Current 197.205 updated to conform to Office of **Federal Register** requirements and to reflect other proposed changes.
197.203	Equivalents	Current 197.206 dealing with acceptable regulatory substitutes, revised for clarity without changing the public's ability to use approved substitutes (equivalents) for regulatory standards.
197.204	Commercial diving operations conducted in foreign waters.	New provisions requiring certain operations to comply with the International Code of Safety for Diving Systems and to possess valid diving system safety certificates.
197.205	Enforcement	New provisions giving the Coast Guard additional enforcement authority and requiring certain vessels to document compliance with the International Code of Safety for Diving Systems.
197.209–197.213 Audits		
197.209	Third-party audits	New provisions for the internal and external auditing of diving-related operations.
197.210	Internal audits.	
197.211	External audits.	
197.212	Pre-audit notification.	
197.213	Audit reporting.	
197.220–197.225 Operational Duties		
197.220	Commercial diving operators	Places specific regulatory responsibilities on CDOs to ensure full organizational accountability. Current regulations provide specific responsibilities only for the person in charge and dive supervisor.
197.221	Persons in charge	Largely retains the person in charge's responsibilities listed in current 197.402, while adding new provisions relating to dive planning and dynamic positioning.
197.222	Dive supervisors	Retains several responsibilities that dive supervisors have under current 197.404, but adds new safety requirements, for example, explicitly giving the dive supervisor final authority over the dive, and requiring the dive supervisor to communicate with dive team members in a language they understand.
197.223	Operations manual	Largely unchanged from current 197.420, but revised for clarity.
197.224	Operational duties in the event of marine casualty or serious marine incident.	Substantively identical to requirements in current 197.484–197.488; revised for clarity.
197.225	Safety management system	New provisions establishing operations under a safety management system.

TABLE 2—PROPOSED NEW OR AMENDED REGULATIONS, 46 CFR—Continued

46 CFR section	Proposed version	Comment on proposed version
	197.240–197.247 Personnel Training and Qualifications	
197.240	General requirement	New provisions to set minimum standards, generally and for each dive team position.
197.241	Standby divers..	
197.242	Dive supervisors.	
197.243	Divers and dive tenders.	
197.244	Life-support technicians.	
197.245	Saturation technicians.	
197.246	Individuals conducting underwater burning, welding, or exothermic cutting.	
197.247	Diver medical technicians.	
	197.250–197.253 Health and Medical Requirements	
197.250	Medical examinations	New minimum health and medical standards.
197.251	Pre-operational verification.	
197.252	Work hours.	
197.253	Ascent to altitude after diving or flying after diving.	
	197.260–197.267 Specific Operations	
197.260	Operations with potential for differential pressures in adjacent areas.	New minimum standards for specific operations.
197.261	Operations conducted from a dynamic positioning vessel.	
197.262	Operations conducted from a vessel that is liveboating.	
197.263	Operations involving SCUBA.	
197.264	Operations involving multiple dives by a diver.	
197.265	Operations in which a diver's decompression is required, but has been omitted.	
197.266	Operations in contaminated water.	
197.267	Operations involving underwater welding and burning.	
	197.270–197.286 Equipment	
197.270	General requirements	New minimum equipment standards.
197.271	Commercial diving operator's general equipment duties.	
197.272	Person in charge's equipment duties.	
197.273	Dive supervisor's equipment maintenance logbook duties.	
197.274	Diver's equipment duties.	
197.275	Volume tanks.	
197.276	Compressed gas cylinders	Covers same topic as current 197.338, but adds new industry standard requirement.
197.277	Pressure vessels for human occupancy	Covers same topic as current 197.328–197.332, but adds new industry standard requirement.
197.278	Pressure piping	Similar to current 197.336, but proposes updated industry standard.
197.279	First aid and treatment equipment	Covers same topic as current 197.454, but adds new industry standard requirement and greater detail.
197.280	Diving ladders and stages	Covers same topic as current 197.320, but adds new industry standard requirement.
197.281	Surface-supplied helmets and masks	Covers same topic as current 197.322, but adds new industry standard requirement.
197.282	Diver's safety harness	Covers same topic as current 197.324, but adds new industry standard requirement.
197.283	Buoyancy-changing devices	Identical to current 197.342.
197.284	Inflatable flotation devices	Identical to current 197.344.
197.285	Oxygen safety	Substantively identical to current 197.326 and 197.452.
197.286	Miscellaneous equipment requirements	See discussion for specific items.
	—Breathing gas supply, diver-carried reserve.	Similar to current 197.340(e), but adds detail for unused ports.
	—Breathing gas supply, primary	Substantively identical to current 197.340(a).
	—Breathing gas supply, secondary	Substantively identical to current 197.340(b).
	—Oxygen	Substantively identical to current 197.340(f).

TABLE 2—PROPOSED NEW OR AMENDED REGULATIONS, 46 CFR—Continued

46 CFR section	Proposed version	Comment on proposed version
	—Nitrogen	Substantively identical to current 197.340(g).
	—Helium	Substantively identical to current 197.340(h).
	—Compressed air	Substantively identical to current 197.340(i).
	—Diving system power	New minimum equipment standards.
	—Equipment to which a manufacturer's service life specification applies.	
	—Equipment used with oxygen mixture greater than 23.5 percent by volume.	
	—Gauges and timekeeping devices	Substantively identical to current 197.318, but adds readability requirement for devices for monitoring diver exposure time under pressure.
	—Oxygen system, pressure greater than 125 psi(g).	Substantively identical to current 197.326.
	—Pressure piping repairs	Covers same topic as current 197.462, but adds new industry standards requirement.
	—Pressure vessel repairs	Covers same topic as current 197.462, but adds new industry standards requirement.
197.290 Dive Team Staffing		
197.290	Dive team staffing requirements	New minimum team size and composition standards.

VII. Requests for Specific Comments

We would like more information about the SCUBA dive teams, whether all dive teams should include medical technicians, and whether or not we should consider alternative approaches to our proposed regulations. The following questions relate to these three issues. In response to these questions we ask for public comments with supporting data and references if possible.

SCUBA dive teams. Our first issue is the minimum size of a SCUBA dive team. Our NPRM proposes setting the minimum at four members, the same as required by the Army Corps of Engineers, but one more than OSHA's minimum.

QUESTION 1: The Coast Guard proposes a SCUBA dive team consisting of four members, based on the assumption that prudent commercial diving operators use SCUBA only when conditions are favorable to the diver and risk is minimal: That is, underwater visibility is greater than 3 feet, currents are less than 1 knot, and dive depth is no more than 100 fsw with no decompression. Is that assumption valid? Should a SCUBA dive team consist of more or fewer than four members? Why? What costs would be incurred and what benefits would be gained by setting the minimum higher or lower than four members?

Medical technicians. The second issue involves certified diving medical technicians (DMTs). Commercial diving exposes divers to unique risks and physical challenges, such as barotrauma, that may require specialized and readily available medical care.

QUESTION 2: Should a DMT always be available, either as part of the dive team or at the dive site during a dive? Why or why not? What costs would be incurred and what benefits would be gained by requiring this level of availability?

Alternative approaches. Our third issue involves alternative approaches.

QUESTION 3: Under one alternative to our proposals, the Coast Guard would not directly oversee TPO audits of commercial diving operations and would allow TPOs to self-certify that their audits comply with Coast Guard standards. However, we would indirectly oversee audits by investigating reported marine casualties and associated civil penalty proceedings. Under a second alternative, neither the Coast Guard nor a TPO would conduct inspections or audits of commercial diving operations. The only compliance oversight would come through casualty investigations and civil penalty proceedings.

The Coast Guard requests input on what merits and drawbacks may be associated with these two alternative approaches?

VIII. Incorporation by Reference

Material for incorporation by reference appears in proposed 46 CFR 197.202. See **ADDRESSES** for information on viewing this material. Copies of the material are available from the sources listed in § 197.202. Before publishing a binding rule, we will submit this material to the Director of the Federal Register for approval of the incorporation by reference.

The following are proposed for incorporation by reference: International Consensus Standards for Commercial Diving and Underwater Operations, 6th Edition, 2010 (''ADCI Standards''): Industry consensus standards for commercial diving and underwater operations for commercial divers, tenders, deck support personnel and supervisors including requirements and guidelines for training, qualification, and certification of commercial divers and conducting various types of diving operations.

IMO Resolution A.831(19), International Code of Safety for Diving Systems, 1995: Internationally accepted minimum standards for design, construction and survey of diving systems on ships and floating structures engaged in commercial diving operations. IMO Resolution A.692(17), Guidelines and Specifications for Hyperbaric Evacuation Systems: International guidelines and specifications developed for design and operation of hyperbaric evacuation systems.

ASME PVHO–1–2012, Safety Standard for Pressure Vessels for Human Occupancy, 2012 (''ASME PVHO–1''): American standard for design, materials, fabrication, tests, inspection and marking of pressure vessels used for human occupancy.

ASME B31.1–2010, ASME Code for Pressure Piping, Power Piping, 2010 (''ASME B31.1''): American standard for design, materials, fabrication, tests, inspection, operation and maintenance of pressurized piping systems.

ASME National Board Inspection Code, NBBPVI, NB23–2011 (''ASME NBBPVI''): American standard for inspection, repair and alteration of boilers, pressure vessels, and pressure relief devices.

ANSI/ISO 15618–1:2001, Qualification testing of welders for underwater welding—Part 1: Diver-welders for hyperbaric wet welding (''ANSI/ISO 15618''): American standard specifying essential requirements, ranges of approval, acceptance requirements and certification for approval testing of diver-welder performance for welding steels underwater in hyperbaric wet environments.

ANSI/ACDE–01–2009, Divers—Commercial Diver Training—Minimum Standards, (''ANSI/ACDE–01–2009''): American standard specifying minimum standards for commercial diver training including what is to be taught, minimum length of training required, minimum qualifications of instructors, and minimum facilities and equipment required to support commercial diver training.

Publication G–4.1, Cleaning Equipment for Oxygen Service, 2009 (''Compressed Gas Association Publication G–4.1''): Cleaning methods for cleaning equipment used in production, storage, distribution, and use of liquid and gaseous oxygen.

Publication G–7, Compressed Air for Human Respiration, 6th Edition, 2008, (Compressed Gas Association Publication G–7''): Information relative to preparation, transportation, handling, storage, and use of compressed air used for human respiration. Publication G–7.1, Commodity Specification for Air, 6th Edition, 2011, (Compressed Gas Association Publication G–7.1): Specification requirements for air and data concerning quality, verification systems, sampling, analytical procedures, and typical uses for various grades and supplemental specification tables.

Federal Specification, BB–N–411C, Nitrogen Technical, 2000 (''Federal Specification BB–N–411C''): U.S. Federal specification outlining requirements for properties, purity, types, grades, classes, handling and storage of gaseous and liquid nitrogen.

Federal Specification, Oxygen, Technical, Gas and Liquid, BB–O–925a, 1961 (''Federal Specification BB–O–925a''): U.S. Federal specification outlining specification and standards for purity, sampling, inspection, testing, handling, storage and delivery of gaseous and liquid oxygen.

ISO 9001—2008, Quality Management Systems—Requirements: International standard specifying requirements for establishing, documenting, implementing, and maintaining a quality management system.

ISO 15618—2001, Qualification testing of welders for underwater welding—Part 1: Diver-welders for hyperbaric wet welding: International standard specifying essential requirements, ranges of approval, test conditions, acceptance requirements and certification for approval testing of diver-welder performance for welding steels underwater in hyperbaric wet environments.

U.S. Navy Diving Manual, 6th Edition, April 2008: Specifications for diving principles and policies, air diving, mixed-gas surface supplied diving, closed-circuit and semiclosed-circuit diving, and diving medicine and recompression chamber operations .

IX. Regulatory Analyses

We developed this proposed rule after considering numerous statutes and Executive Orders (E.O.s) related to rulemaking. Below we summarize our analyses based on these statutes or E.O.s.

A. Regulatory Planning and Review

E.O.s 12866 (''Regulatory Planning and Review'') and 13563 (''Improving Regulation and Regulatory Review'') direct agencies to assess the costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility.

This proposed rule is not a significant regulatory action under section 3(f) of Executive Order 12866, Regulatory Planning and Review, as supplemented by Executive Order 13563, Improving Regulation and Regulatory Review. The Office of Management and Budget (OMB) has not reviewed it under that Order. Nonetheless, we developed an analysis of the costs and benefits of the proposed rule to ascertain its probable impacts on industry. We consider all estimates and analysis in this Regulatory Analysis (RA) to be preliminary and subject to change in consideration of public comments. A draft Regulatory Analysis including a draft preliminary Initial Regulatory Flexibility Analysis (IRFA) is available in the docket where indicated under the ''Public Participation and Request for Comments'' section of this preamble. A summary of the preliminary Regulatory Analysis and Initial Regulatory Flexibility Analysis follows. Our preliminary RA provides an evaluation of the impacts associated with this proposed rule. Table 3 below provides a summary of the affected population, costs, and benefits of the proposed rule.

TABLE 3—SUMMARY OF THE AFFECTED POPULATION, COSTS AND BENEFITS OF THE NPRM

Category	Summary
Applicability	Diving undertaken in connection with commercial operations conducted from deepwater ports (such as offshore liquefied natural gas facilities), or OCS activities, or from vessels that are required to have a Coast Guard certificate of inspection; 46 CFR 197.200.
Affected Population	87 owners or operators of commercial diving operations (mainly heavy offshore marine construction or working from USCG-certificated vessels). 12 TPOs.
Costs ($, 7 percent discount rate)	Annualized: Manning: $1,460,500. Non-Manning: $350,000. Total: $1,811,000. 10-Year: Manning: $14,606,000. Non-Manning: $3,501,000. Total: $18,107,000.
Benefits ($, 7 percent discount rate)	*Monetized Benefits from Manning Requirement* Annualized: Fatalities: $2,366,000. Injuries: $116, 935. Total: $2,482,935.

TABLE 3—SUMMARY OF THE AFFECTED POPULATION, COSTS AND BENEFITS OF THE NPRM—Continued

Category	Summary
	10-Year: Fatalities: $23,660,000. Injuries: $1,169,350. Total: $24,635,350. Annualized Net Benefits: $1,056,000. Benefits attributable to other requirements cannot be quantified easily since they intersect with all improvements. Breakeven analysis on other rule items yields anywhere from 1 fatality per 44 years to 1 fatality every 3,056 years to breakeven.[8] Sets one industry standard, and provides Coast Guard with additional inspection options to implement commercial diving operations.

The purpose of this proposed rule is to save lives by revising and updating our existing commercial diving regulations to reflect current industry best practices.

Agencies take regulatory action for several reasons, one being the failure of markets to reach the socially optimal outcome. This can occur when there are economic incentives lacking for industry to pursue that outcome and such market failures are the impetus for this proposed rule. A negative externality is the by-product of a transaction between two parties that is not accounted for in the transaction. Vessels that operate with lower safety standards may cause harm or increased risk of harm without accounting for the consequences to third parties, who do not directly participate in the business transactions of the business entities such as merchant seaman. These costs are not borne by the responsible entities and are therefore external to the business decisions of the responsible entity.

The casualties resulting from commercial diving accidents are an example. The cost of the higher safety standards is typically borne by the vessel owner while the cost of an accident could be distributed across various entities, including the vessel owner, other vessel owners, related maritime businesses and commercial diver teams. These costs can be in the form of injuries and death.

The material failure of the private market increases the risk to other parties. There exists an uncompensated increase in risk due to potentially inconsistent safety practices in the commercial diving industry. Consequently, regulatory action is required to spur the industry to take action to reduce risk industry-wide and therefore attain the socially optimal outcome.

The functional benefits of this proposed rule are to reduce the number of accidents in all commercial diving operations that the Coast Guard has responsibility for (especially the offshore diving industry), as well as to minimize the adverse impacts in the event that an accident occurs.

Affected Population

Based on a review of current Association of Diving Contractors International industry information and Bureau of Labor Statistics diving population data, there are almost 200 domestic firms involved in commercial diving operations, of which 87 are subject to Coast Guard jurisdiction. Approximately 75 of these firms are registered with ADCI and, as such, are required to comply with the ADCI consensus standards. We estimate there are 12 firms covered by Coast Guard jurisdiction that are not members of ADCI. Table 4 demonstrates generally how Coast Guard went from the commercial diving population to a distribution of dive types and firms both within the ADCI framework and without.

TABLE 4—USCG REGULATED COMMERCIAL DIVING BY TYPE AND FIRM COMPOSITION

Item	Population of USCG regulated commercial divers by type					Total
	Saturation *	SCUBA **	Surface supplied air ***		Mixed gas	
			100 fsw/no decompression	Other		
ADCI Divers	336	40	93	191	96	756
Non-ADCI Divers	0	0	20	35	.....	55
Total	336	40	113	226	96	811
ADCI Dive teams	24	10	23	38	19	114
Non-ADCI Dive Teams	0	0	5	7	0	12
Total	24	10	28	45	19	126
ADCI Marine Firms ****	12	10	13	21	19	75
Non-ADCI Marine Firms *****	0	0	5	7	0	12

[8] See RA's Appendix D for Breakeven Calculations.

TABLE 4—USCG REGULATED COMMERCIAL DIVING BY TYPE AND FIRM COMPOSITION—Continued

Item	Population of USCG regulated commercial divers by type					Total
	Saturation *	SCUBA **	Surface supplied air ***		Mixed gas	
			100 fsw/no decompression	Other		
Total	12	10	18	28	19	87

* Number of Saturation Vessels * 14 crewman * 2 crews.
** USCG estimate of 5% of total diver population.
*** USCG estimates based upon ADCI member distribution.
**** Known number of ADCI firms.
***** Inferred Number of Firms based upon "excess" (not accounted for in ADCI) Diver population.

Table 5 Commercial Diving Population that will Incur Costs

Requirements by Diver Type	Saturation Teams	SCUBA Teams	Surface Supplied Air Teams		Mixed Gas Teams	Total Teams
			110/fsw/No Decompression	Other		
ADCI Dive Teams	24	10	23	35	19	114
Manning			23			23
Audits						
Drills						
Med I						
Med II	24					
Rec & Doc	24	10	23	38	19	114
Non-ADCI Dive Teams			5	7		12
Manning			5			5
Audits			5	7		12
Drills			5	7		12
Med I			5	7		12
Med II						
Rec & Doc			5	7		12
Total	24	10	28	45	19	126

Source: USCG

The key population subset affected by the manning additional costs is the Surface Supplied Air 100fsw/no decompression mode. As shown in Table 5, both ADCI and no-ADCI firm groups are affected given the CG decision to increase the number of dive team members by one number. Most of the remaining costs impact the non-ADCI members, since we cannot confirm they are following ADCI protocols. Also, one qualification for saturation diving, that of taking a medical course every two years for saturation diving technicians, is an additional requirement for ADCI divers in that mode. Since we assume that non-ADCI commercial diving is composed of small firms and simpler diving modes than the complex saturation diving mode, this requirement does not affect them.

In addition, total TPO (auditor) population is expected to be 12. The TPO population includes current 10 auditors and the two estimated to be required by the non-ADCI firms.

Regulatory Alternatives

We considered four alternatives before settling on the approach proposed in this notice of proposed rulemaking (NPRM).

1. Take no action. We would leave the existing regulations in place without updating them. Voluntary compliance with commercial diving industry consensus standards and the possibility of civil liability would continue to be the primary drivers of improvements in commercial diver safety. We think this is inconsistent with our regulatory

responsibility to promote safety, and it also ignores the fact that some members of industry and the general public have criticized our existing regulations for being out of date.

2. Develop an international code. We would work with the International Maritime Organization to update its Code of Safety for Diving Systems, and adopt it as being applicable to all U.S. commercial diving operations wherever they were occurring. This could promote diver safety, and we do not rule out continued involvement in assisting in development of the standard. However, it would take years to develop and would not be effective without additional requirements necessary to further define the vague language that often accompanies international codes. Furthermore, we believe the existing IMO Code, coupled with the U.S. regulations we propose in this NPRM, should be applicable for U.S. vessels on an international voyage, but do not believe the international requirements should necessarily be imposed on U.S. vessels that are not engaged on international voyages.

3. Development of unique Coast Guard regulations: Under this alternative, the Coast Guard would develop its own updated regulations without reference to existing industry standards. This would involve additional regulatory time and effort for the Coast Guard, and ultimately might produce regulations that are similar to existing industry standards. However, this alternative would be contrary to the National Technology Transfer and Advancement Act, 15 U.S.C. 272 note, which requires agencies to use voluntary private sector consensus standards in their regulatory activities unless the agency provides Congress, through OMB, with an explanation of why using these standards would be inconsistent with applicable law or otherwise impractical. Additionally, Coast Guard developed standards would likely place diving firms who are members of ADCI in the position of facing duplicative enforcement costs, due to the fact that they are already complying with the ADCI guidelines.

4. Adopting Industry Standards without Manning Changes Alternative: We considered and rejected this alternative, which entails proposing regulations that incorporate accepted industry consensus standards (*e.g.* ADCI International Consensus Standards for Commercial Diving and Underwater Operations, 6th edition), but without an increase in manning that CG might want. This would codify many current consensus industry standards and provide enforcement capability. CG would incorporate all or most of what is in the ADCI consensus standards. However, CG could not incorporate it in total because some of the items in our existing regulations are not included in the ADCI standard. Much of what is written in the proposed regulations is written to augment the consensus standards to ensure previous requirements are not lost. CG ultimately rejected this approach, although less expensive, because of the lack of direct manning benefits in reducing fatalities and injuries.

5. *Accepted alternative: Adaptation of industry standards:* We considered and accepted this alternative, which entails proposing regulations that incorporate accepted industry consensus standards (*e.g.* ADCI International Consensus Standards for Commercial Diving and Underwater Operations, 6th edition). This will codify many current consensus industry standards and provide enforcement capability. CG incorporated most of what is in the ADCI consensus standards. CG could not incorporate it in total because some of the items in our existing regulations are not included in the ADCI standard. Much of what is written in the proposed regulations is written to augment the consensus standards to ensure previous requirements are not lost. CG used our existing regulations as a baseline and incorporated ADCI mostly based on that and the recommendations we got from industry on certain topics. These requirements also include an increase in manning (by one person) for the Surface Supplied Air no decompression mode.

Table 6 summarizes these alternatives.

TABLE 6—DESCRIPTION OF ALTERNATIVES

Alternative	Costs	Benefits	Evaluation
Take No Action	None	None	Not preferred because of risks that appear to still exist within the industry in spite of ADCI protocols.
Develop an International Code.	Likely Costlier and less Timely than best approach due to Increased No of Parties Involved.	Reduce Remaining Risk	Not preferred because of timely expense of having many parties involved that would have slowed progress in getting a rule out expeditiously.
Develop Unique Coast Guard Regulations.	Might be Costlier due to Duplication with ADCI rules.	Reduce Remaining Risk	Not preferred because of high risk of duplication of many of ADCI protocols that already exist.
Proposed ADCI Duplicative Rule in NPRM without Manning.	$400,000	Reduce Remaining Risk	Marginal Approach especially given ADCI standards that still would not cover all CG desired requirements.
Proposed Rule in NPRM with Manning.	$1.81 million	$2.4 million	Best Approach consistent with comprehensive, extensive and timely approach that gives the best bang for the buck.

Source: USCG.

Costs

This proposed rule calls for CDOs and commercial divers to comply with a new regulatory baseline that is based on the industry-developed consensus standards of ADCI plus certain CG additions (in manning and medical area). We believe the majority (75 out of 87 identified commercial diving firms) of the affected population is in compliance with the proposed baseline. We know that the 75 ADCI firms are in general (except for manning and medical upgrades from CG) in compliance or else they would not qualify for ADCI membership. Members of ADCI must meet the Association's standard or face a suspension of their membership and potential loss of contracts. For example, ADCI members who fail an ADCI audit inspired by a complaint or a random audit exercise, are given time to correct the deficiency. If the deficiency is not corrected in a reasonable time, ADCI will (and has in the past) dis-enroll the offending member. Members generally know this

is a dangerous route to take as the re-enrollment process is very expensive, requiring complete audits of every facet of their operation. In general, not having the ADCI certification will likely result in fewer work opportunities particularly with the oil and natural gas industries.[9]

We have no gauge of any compliance for the inferred non-ADCI firms. However, we anticipate that some CDOs and divers will need to take steps to ensure compliance with the proposed audit system, drills and exercises, medical examination requirements, personal operational requirements, and reporting/recordkeeping requirements. We assess the costs for these CDOs and divers not already in compliance with ADCI (based upon the twelve Non-ADCI firms), as well as for all CDOs and divers to meet the other requirements added by the Coast Guard.

The costs impacting this rule are from changes in requirements in Dive manning, Drills, Audits, Med Issues, Records and Documentation. Total dive manning industry requirements are based upon 28 (23 ADCI and 5 non-ADCI) incremental divers in that SSA mode. Audits are required both internally and by external means (TPO) and range from $176-$2,096 depending on the cycle or vessel/firm. Drills can cost from $3300-$14000 per drill/firm depending on type (Standard Operations Review, Diver Recovery, or Emergency Rescue) for an annual total cost of $18000–26000. Medical costs comprise two items: The first item is an annual medical exam for the 55 non-ADCI divers while the second is a biennial training session on cardiopulmonary resuscitation (CPR) and first aid for Saturation Technicians that were not ADCI required (an oversight expected to be corrected in the near future) training. The costs of the first medical item are the 55 non-ADCI divers times the annual medical examination costs plus the records storage costs for a total $23,375 or ($1948 per firm). The second cost is the $60 cost of the training every other year times the Saturation Technicians (96) for a total of $5,760.

Costs for CDOs are shown in Table 7.

TABLE 7—AVERAGE COST PER FIRM: COMMERCIAL DIVING NPRM

Rule requirements	Cost per CDO (2012 $)
Dive Manning	52,163
Drills	18,220–25,508
Audits	3,549
Recordkeeping & Documentation	2,331
Medical I: Exams	1,948
Medical II: Training	240
Total	78,211–85,499

Source: USCG Calculations.

The majority of the costs are the result of new dive manning requirements, particularly for surface-supplied air. The proposed costs are the minimum required as, for example, adding more than one diver for all of the other modes would not be cost effective and in some cases. likely counter-productive. The dive manning levels now comport with industry practices.

Requirements for dive manning were calculated by first identifying the marine commercial diving population (BLS, ADCI sources) and developing the mode (Saturation, SCUBA, 3 types of Surface Supplied Air, and Mixed Gas) teams as explained in the population development description. CG subject matter experts considered the ADCI requirements and then decided another team member (Dive Tender) was necessary for Surface Supplied Air (100fsw/No decompression mode) (SSAn). The decision was based upon the notion that all divers in the water had to have a dive tender taking care of all the umbilical related lines for the in-the-water diver. That increment was then multiplied times the number of SSA teams found earlier. The per man cost was from BLS 2012 Commercial Diving Apprentice level and loaded with a 1.42 factor again based upon BLS information. All labor costs are generally based upon either an apprentice or a median experienced diver (loaded wages of $52,000–69,000).

For TPOs, the total costs estimated are $14.9 thousands of dollars over ten years due to the NPRM. The majority of costs accrue to labor requirements for various activities (developing the TPO auditor application, change of TPO auditor, and storage of audit records).

We estimate the total 10-year cost of the proposed rule to the commercial diving industry and third party organizations to be $17.8 million undiscounted, or $12.5 million at a 7-percent discount rate. We estimate the annualized cost of the proposed rule to be $1.78 million at a 7-percent discount rate. In addition to the private sector costs, we estimate the government will incur ($27,874) in annual reporting and record keeping review costs. This increases the total 10-year cost of the proposed rule to $18.1 million ($1.81 million annualized, 7-percent discount rate) (Table 8).

[9] Conclusions based upon various USCG conversations with industry participants.

Table 8 Total Cost ($) of Commercial Diving Rule (w USCG costs)

Year	Drills	Dive Manning	Audits	Recordkeeping & Documentation/1	Medical Issues/2/	Third Party/3	Total /4	Disc @7%	Disc @ 3%
1	43,729	1,460,554	42,589	233,625	31,260	3,220	1,818,277	1,699,324	1,765,317
2	43,729	1,460,554	42,589	233,625	25,500	1,296	1,807,292	1,578,559	1,703,546
3	43,729	1,460,554	42,589	233,625	31,260	1,296	1,813,052	1,479,991	1,659,200
4	43,729	1,460,554	42,589	233,625	25,500	1,296	1,807,292	1,378,775	1,605,756
5	43,729	1,460,554	42,589	233,625	31,260	1,296	1,813,052	1,292,681	1,563,955
6	43,729	1,460,554	42,589	233,625	25,500	1,296	1,807,293	1,204,275	1,513,579
7	43,729	1,460,554	42,589	233,625	31,260	1,296	1,813,053	1,129,078	1,474,178
8	43,729	1,460,554	42,589	233,625	25,500	1,296	1,807,293	1,051,861	1,426,693
9	43,729	1,460,554	42,589	233,625	31,260	1,296	1,813,053	986,180	1,389,554
10	43,729	1,460,554	42,589	233,625	25,500	1,296	1,807,293	918,736	1,344,795
Total	437,287	14,605,544	425,886	2,336,249	283,800	14,883	18,106,948	12,719,459	15,446,572
Annualized								1,810,965	1,810,810

Source: USCG Calculations

1) Includes $28,530 in annual reporting and record keeping costs for USCG

2) Costs for non-ADCI divers annual, but costs for Sat dive technicians are biennial

3/TPO costs include those for application, auditor change and storage of audit information.

4/Includes $3,300 cost to purchase ADCI 6 in year 1

Benefits

The primary benefits of this proposed rule are based on the reduction in risk of fatalities as well as injuries related to commercial diving incidents and are estimated from casualties foregone or mitigated as shown in Table 9.

TABLE 9—RULE REQUIREMENTS AND ASSOCIATED BENEFITS

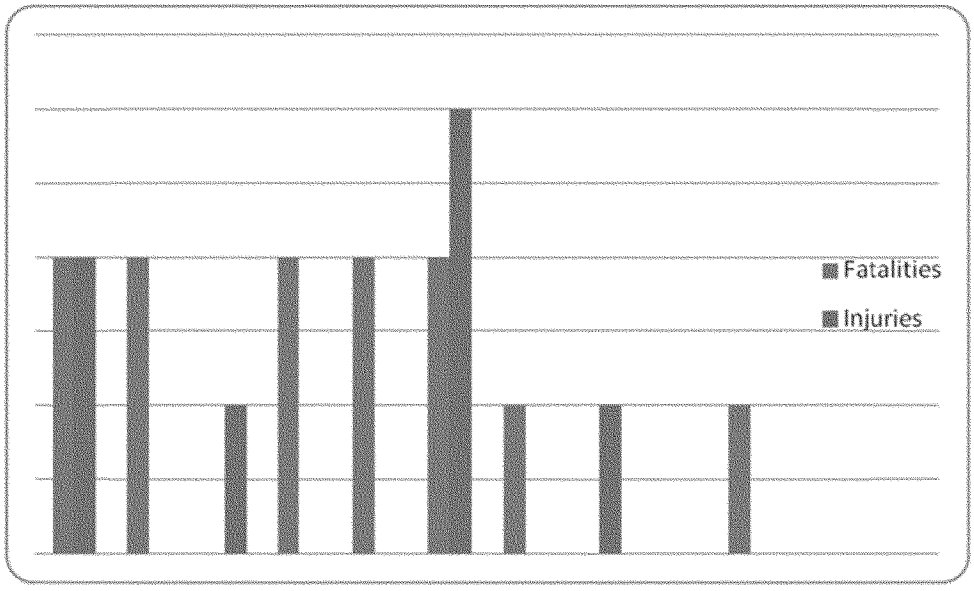
Rule requirements	Benefit
Dive Manning	Requires non-decompression Surface Supplied Air dive teams to add a 5th member to handle lines as a novice member.
Drills	Requires CDO operators to conduct a series of drills at least monthly to maintain skill levels in emergencies.
Audits	Requires all CDOs and associated vessels to have timely audits to record existing conditions of all equipment and record procedures. Consistent with ADCI requirements.

TABLE 9—RULE REQUIREMENTS AND ASSOCIATED BENEFITS—Continued

Rule requirements	Benefit
Recordkeeping & Documentation	Requires CDO s to develop and maintain for 5 years records of various aspects of CD operations from equipment maintenance to diving activities, to CG notifications, to logbooks. Maintaining records also assists the CDO by reminding him or her that actions are needed to remain in compliance with the rules.
Medical I: Exams	Requires all CDs, especially non-ADCI CDs to obtain an annual medical exam complete with hyperbaric analysis emulating the current ADCI requirements.
Medical II: Training	Requires certain members of a Saturation Dive Team (life support technician and saturation technician) to have a CPR & first aid certification.

We reviewed the Marine Information for Safety and Law Enforcement (MISLE) data set of the commercial diving fatalities from 2002–2011 (12 fatalities- an average 1.2 per year and 8 injuries an average of .8 per year). Exhibit 1 shows the distribution of fatalities and injuries over the ten year period.

Exhibit 1: Trends in USCG Regulated Commercial Diving Fatalities and Injuries



The incident reports suggest deficiencies in commercial diving operations, which would be addressed by the proposed provision, For dive manning, we identified 4 incidents that could benefit from the NPRM. Specific issues identified include lack of proper manning, lack of proper medical examination protocols, lack of maintenance of equipment, lack of drills lack of audits, etc. By identifying specific issues within each incident that likely would be mitigated by the NPRM, and applying an effectiveness factor, we were able to estimate a mitigated value using the value of a statistical life (VSL) approach.

TABLE 10—INCIDENT LINKS TO THE PROPOSED RULE

Activity ID	Related provision	Justification
	Fatalities	
1483715	Personnel Operational Requirements.	Report indicated a standby diver was not properly suited up and ready to deploy as required by proposed rule. Investigative officer as well as fellow divers (during interviews) identified this as a potential cause.
	Drills	Additional drills could have exposed diver to a hot suit, reminded to follow procedures when in trouble, and provided practice on removing equipment.
	Audits	Regular audit procedures would likely have uncovered issues with equipment maintenance as well as operational procedures and readiness.

TABLE 10—INCIDENT LINKS TO THE PROPOSED RULE—Continued

Activity ID	Related provision	Justification
1645241	Records & Documentation Related to Equipment Inspection.	Problems were discovered with the helmet. However, diver-owned/-maintained helmet lacked a comprehensive record of repairs and maintenance. No records available to indicate when breathing hoses used by diver were last pressure tested or hydrostatic tested. Proposed regulation requires that log books be updated to track equipment tests. This could have ensured equipment was inspected periodically or a pre-dive inspection of equipment was conducted.
	Audits	Auditing requirement may have identified the marginal state of maintenance of the diver's helmet. Furthermore, audit would have likely discovered that the vessel did not have a supply of medical-use oxygen on board.
	Personnel Operational Requirements.	Standby diver was not outfitted with any rescue related equipment to address the situation as required by proposed rule.
	Drills	Drills required by proposed rule would help ensure diver follows procedure in an emergency. Diver did not slide the pneumofathometer underneath his neoprene neck dam and into his helmet. This would have taken him several seconds to do, but it could have provided him with an alternate source of breathing air.
2270536	Personnel Operational Requirements.	Report indicated that company personnel displayed fatigue due to lack of sleep. Proposed rule would include 12 hour work hour limits in 24 hour period.
	Drills	Drills would have improved the probability divers followed written and established safety procedure. As indicated in interviews, ''there was no safety meeting for the dive crew prior to incident. Divers were unaware of any safety procedure or plan to follow in case an emergency to retrieve an injured diver out of the water.'' As stated under the observations by the inspecting officer, ''Training for dive team personnel seemed to be lacking.''
	Records and Documentation Related to Equipment Inspection.	Interviews indicated that the diver's umbilical may have been fouled. Documentation of maintenance and inspection of equipment is required under the proposed regulation. This could have helped ensure equipment was periodically inspected.
2734747	Medical Exams	Proper medical examination may have revealed tears or irregularities in the diver's lungs and kept him from diving.
	Audits	Audits would ensure compliance with the medical fitness requirement for divers.
	Records and Documentation Related to Medical Records.	Documentation of medical examination is required by the proposed rule and maintains a history of medical conditions that could be used to avoid putting a diver in danger.
2765094	Personnel Operational Requirements.	Standby diver was not ready to enter water as required by rule.
	Audits	Regular Audits may identify failures of sufficient manning/certification levels of the dive team.
	Drills	Rescue diver had trouble donning gear when preparing to enter water. Investigating officer recommendation is for monthly emergency rescue and recovery diving training for all commercial diving vessels. In addition to a fatality, multiple injuries resulted from incident.
3281272	Personnel Operational Requirements.	One of the supervisors was also the standby diver. Proposed rules would not allow multiple responsibilities.
	Audits	Regular Audits may identify failures of sufficient manning/certification levels of the dive team.
	Medical Exam	Diver had previously unknown cardiac condition. A medical exam focused on hyperbaric exposure would have led to a cardiac exam which could have identified the cardiac condition and not permitted the dive.
3100303	Records and Documentation Related to Medical Records.	Documentation of diver's medical fitness may identify the diver's condition and medication risk.
2866598	Drills	Delays were experience in recovering troubled diver. Drills would have identified the difficulty of one tender/diver conducting diver retrieval.
	Personnel Operational Requirements.	Superintendent also was serving as dive supervisor. The proposed rules would not allow multiple responsibilities.
	Audits	Audits would ensure compliance with the medical fitness requirement for divers.
	Records and Documentation.	Documentation serving as a guide and checklist during the JHA may have prevented the diver's entanglement and the uncontrolled ascent of the lift bags.
1970383	Medical Exams	Lab test results indicated diver had hypertensive heart disease and drowned. Potential causal factor for this fatality was a pre-existing medical condition apparently aggravated by the individual performing strenuous activity while diving. Medical exams may have identified this precondition and prevented fatality.
	Injuries	
2762375	Personnel Operation Requirements.	The need for a diver to work for such extended periods indicates a lack of sufficient manning as required by rule.
	Audits	Regular audits would identify substandard practices and excessive work hours resulting in fatigue.
1600506	Personnel Operational requirements.	Dive supervisor was acting as the diving tender. The Diving Supervisor could not oversee the safety of the operation if he was performing dive tender duties. The proposed rules would not allow multiple responsibilities.
2765094	(See Details Above)	(See Details Above).

For safety and security analysis, the VSL approach is used to monetize the value of fatalities prevented. The VSL does not represent the dollar value of a person's life, but the amount society would be willing to pay to reduce the probability of death. The VSL value used in this analysis to calculate an average annual cost of fatalities mitigated is $9.1 million.[10] The resulting benefit of the NPRM is $2.4 million. Subtracting out the $1.46 million in manning costs yields a marginal benefit of $940,000 for the manning provisions only. This amount is also the marginal fatality benefit for the rule since benefits from the other items could not be quantified even though they provide benefits. For example, the summaries of the following two case studies illustrate how complex and difficult it is to estimate benefits for this rule let alone quantify them.

Case Review Example 1

Incident Report 2765094

Vessel: Rowan Halifax/Global Explorer

Date:8/29/06

Damages:0
Deaths:1
Injuries:2
Edited Brief from MISLE (see RA for complete text)

Commercial divers using surface-supplied air were working on the rigging of the legs of a sunken MODU. A diver was attempting to attach a 2 and ¾ inch chain to a shackle for pre-rigging the MODU. Shortly after diver 1entered the water, there was a loss of communication with him, although a gurgling sound inside helmet was heard. The standby diver was ordered to splash. Diver 1 visibly panics and begins ascent towards diving bell Diver 2 dons gear, but has trouble with airflow to helmet. Problem fixed and he enters the water. Somehow Diver 1's helmet lands in worksite. Diver 2 descends, switching to 14% O2. He pulled his way to Diver 1 via latter's hose. He notices Diver 1's helmet from 20 feet away. Diver 2 arrives at Diver 1, shakes him with no response. Diver 2 notifies topside to pull up slack. Divers arrive at bell and with standby diver, attempt to pull Diver 1 into bell. Diver 1 is finally pulled up topside. Diver 2 becomes fouled on the bell, then unfouls himself. He begins his ascent but switches to air ''on the fly''. Vessel paramedic performs lifesaving procedures. Since the paramedic is not hyperbaric qualified, backup is ordered into hyperbaric chamber to continue lifesaving procedures. Shore side physician finally orders halt to lifesaving procedures. Shortly afterwards, Diver 2 shows signs of the bends, while backup, still ''dirty'', from an earlier dive that day, experiences decompression sickness. Investigation concluded that there was inadequate supervision and a good rule was misused.

Location Lat 028°04″4′ N, Lon 092°42″0′ W Gulf of Mexico.

Reviewer Notes: Supervisor did not have a standby diver ready on a moment's notice to splash and assist another diver in the water. The proposed NPRM rules provide for a very strict regime for the supervisor to follow. From Section 290 (a), (b) and (c) clearly require the supervisor to make sure ''. . . that minimum dive team requirements are met . . .'' and ''ensure that the necessary levels of personnel and equipment are available for all commercial diving operations.'' Further, Section 197.222 of the NPRM requires ''Each supervisor . . . must . . .: (a) Comply with this subpart and The applicable requirements for dive supervisors and diving modes outlined in sections 3.0 and 4.0 of the ADCI Standards (incorporated by reference . . .) . . .

Fatality at least partially resulted from inadequate supervision according to the report's conclusions. From the facts of the report, the standby diver was not ready to splash at a moment's notice and subsequently had equipment issues. This delay contributed to valuable time in getting the troubled diver out of the water. Also, the vessel paramedic was not trained in hyperbaric ailments.

Regular Audits may identify failures of sufficient manning/certification levels of the dive team.

Regular drills may have mitigated this incident. The rescue diver had trouble donning gear when preparing to enter water. Investigating officer recommendation is for monthly emergency rescue and recovery diving training for all commercial diving vessels. In addition to a fatality, multiple injuries resulted from incident.

Case Review Example 2

Incident Report 3929340

Vessel: NS Power

Date:1/26/2011

Damages:0
Deaths:1
Injuries:0
Edited Brief from MISLE (see RA for complete text)

On January 8, 2011, a series of divers were engaged in bottom cleaning, through solo dives, on the NS Power from a series of other vessels including the King Arthur. Four divers used in sequence to perform bottom cleaning work on the NS Power. During the course of the work evolution, a diver's helmet neck seal failed flooding the helmet. While the diver was able to leave the water, delay caused time constraints on the activity.. Then another diver reported regulator problems in his dive. Attempts to retrieve him are less than by the book and result in his drowning. Some 13 hours after the beginning of the dive evolution, Galveston receives word of an unresponsive diver on the King Arthur.

15 NM SE Galveston Texas Galveston Bay

Reviewer Notes: From the MISLE report: dive support team members were negligent in their duties while a diver was in the water resulting in the loss of life. Investigation concluded that there was inadequate supervision and a good rule was misused as well as active failures of equipment. Supervisor did not have a standby diver ready on a moment's notice to splash and assist another diver in the water. The proposed NPRM rules provide for a very strict regime for the supervisor to follow. From Section 290 (a), (b) and (c) clearly require the supervisor to make sure ''. . . that minimum dive team requirements are met . . .'' and ''ensure that the necessary levels of personnel and equipment are available for all commercial diving operations.'' Further, Section 197.222 of the NPRM requires ''Each supervisor . . . must . . .: (a) Comply with this subpart and The applicable requirements for dive supervisors and diving modes outlined in sections 3.0 and 4.0 of the ADCI Standards (incorporated by reference . . .) . . .

Regular Audits may identify failures of sufficient manning/certification levels of the dive team.

Regular drills may have mitigated this incident. The rescue diver had trouble donning gear when preparing to enter water.

In both cases, the addition of one more dive team member so that responsibilities were adequately spread around might have made all the difference in the world to the victims. In addition, other requirements of the NPRM rule could have mitigated the incidents. The rule's other benefits besides proper manning and manning procedures, while very visible, are more difficult to quantify. They are drills, audits, records and documentation, as well as medical requirements.

As seen in the first example case, regular drills likely would have mitigated one of the problems in that incident. Drills provide regular practice for situations that require immediate instinctive response.

Regular audits would have provided a paper trail to maintenance needs and if recommendations were followed through on. Audit procedures likely would have mitigated issues ion both incidents. Records and documentation are parallel with audits in providing a trail of responsibility for

[10] U.S. Department of Transportation Memorandum, Guidance on Treatment of the Economic Value of a Statistical Life in U.S. Department of Transportation Analyses, available at *http://www.dot.gov/sites/dot.dev/files/docs/VSL%20Guidance%202013.pdf*

maintaining equipment in proper working order.

Finally, at least two incidents in our baseline and one in the cases above might have been mitigated if the divers were undergoing regular medical examinations. Also, one other medical requirement in the NPRM rule has certain saturation dive team members taking CPR and first aid training. This requirement, only for the saturation dive team technicians (all other dive team members already satisfy this requirement), is critical to the successful operation of that dive mode.

Injury mitigation also is a benefit of this rule. Almost $117,000 per year in injury mitigation benefits are received from this rule as well. These benefits result from improved protocols in a wide variety of areas covered by the rule.

The total net benefits from the rule are $1,056,000 combined fatality mitigation and injury mitigation.

We also used a breakeven analysis approach for benefit estimation for the other rule items. In general, the typical CDO incident involves the death or injury of 1 diver, therefore the breakeven comparison against the VSL for 1 fatality is applicable, rather than other breakeven scenarios.

TABLE 11—INCREMENTAL BREAKEVEN ANALYSIS OF PROPOSED RULE

Item	Benefits description	Average annual cost *		Net benefits (7%, $ millions)	Fatalities reduced to breakeven
			Annualized (7%, millions)		
Proposed Rule Increment:					
Manning	Increase 1 crewman/ team for SSA for both ADCI and non-ADCI firms.	2.4	1.46	0.94	N/A.
Documentation & Recordkeeping.	Assists CG with enforcement.	Not Quantifiable	0.205	N/A	1 every 44 years.
Drills	Non-ADCI Firm Drills provides regular training.	Not Quantifiable	0.0437	N/A	1 every 208 years.
Audits	Non-ADCI Firm Audits assists CG with enforcement.	Not Quantifiable	.0426	N/A	1 every 214 years.
Medical Exams	Medical Exams for Non-ADCI Firms provides safety measure.	Not Quantifiable	0.0238	N/A	1 every 389 years.
Medical Training	Support Saturation Diver Crewmen receive First Aid and CPR Training.	Not Quantifiable	0.003	N/A	1 every 3,056 years.
TOTAL		≥2.4	1.755	≥0.645	

Source: USCG Calculations
* Total may not sum due to rounding.

We assume that this proposed rule would result in a constant reduction in the risk of fatality due to a commercial diving fatal accident every year following the rule's implementation and therefore use annualized costs in the equation. For these other rule items, we use annualized costs at a 7-percent discount rate over a 10-year period, or $.3 million, for this proposed rule. We then take the $9.1 million,[11] as the benefit that would be derived from the proposed rule if one fatality per year is prevented and compare it to the annualized individual item's cost that would be incurred (*e.g.* for drills: $9.1 million/$43,729=218 years). At a 7-percent discount rate, this proposed rule's other cost elements would need to prevent anywhere from 1 fatality in 44 years to 1 in 3,056 years to breakeven.

B. Small Entities

Under the Regulatory Flexibility Act (5 U.S.C. 601–612), we have conducted an Initial Regulatory Flexibility Analysis and considered whether this proposed rule would have a significant economic impact on a substantial number of small entities. The analysis is as follows: The U.S. Coast Guard (USCG) has performed this analysis of the impacts on small businesses from the proposed rule. USCG performed this assessment using the cost information discussed in cost chapter of this RA.

Whenever an agency is required by section 553 of the Regulatory Flexibility Act of 1980 [12] (RFA) or any other law, to publish general notice of proposed rulemaking for any proposed rule, or publishes a notice of proposed rulemaking for an interpretative rule involving the internal revenue laws of the United States, the Regulatory Flexibility Act requires that the agency prepare and make available for public comment an initial regulatory flexibility analysis. The RFA requires that such analysis describe the impact of the proposed rule on small entities and that the initial regulatory flexibility analysis or a summary be published in the **Federal Register** at the time of the publication of general notice of proposed rulemaking for the rule.

In addition, the RFA requires that the agency transmit a copy of an initial regulatory flexibility analysis to the Chief Counsel for Advocacy of the Small Business Administration. In the case of an interpretative rule involving the internal revenue laws of the United States, The RFA's requirements apply to interpretative rules published in the **Federal Register** for codification in the Code of Federal Regulations, but only to the extent that such interpretative rules impose on small entities a collection of information requirement.

Under the Regulatory Flexibility Act [13] the Coast Guard must consider whether the rule would have a significant economic impact on a substantial number of small entities. Small entities [14] include small

[11] Op. cit.

[12] Public Law 96–354 (5 U.S.C. 601–612).

[13] *http://www.sba.gov/advo/laws/regflex.html*

[14] The RFA considers ''small entity'' as having the same meaning as the terms ''small business,'' ''small organization'' and ''small governmental jurisdiction.''

businesses,[15] small not-for-profit organizations that are independently owned and operated and are not dominant in their fields,[16] and small governmental jurisdictions with populations of less than 50,000.[17]

Based on the information from this analysis, we found that:

- There are no governments or not-for-profit organizations which are anticipated to be affected by the proposed rule.
- There are 87 U.S. entities (all private firms) that would potentially be impacted by the proposed rule. Of the 87, 75 are ADCI-registered firms of which we have some information on, and 12 are non-ADCI firms of which we have no information on but are assumed to be small. Furthermore, of the 75 firms we can identify, we found ownership and revenue data for only 45 firms. Of these 45 firms, 37 were determined to be small entities based on available data.
- We assume firms without available ownership or revenue data are small. Therefore, of the 87 firms considered only 8 can be considered non-small given the evidence available for this analysis.
- Initial and annual recurring costs of the proposed rule would result in less than 1 percent impact on revenue for 32 percent of the small entities with available data;
- 68 percent of small entities with available data will incur costs greater than 1 percent of revenue.

This chapter provides an Initial Regulatory Flexibility Analysis for commercial diving operations.

[15] The RFA defines ''small business'' has the same meaning as the term ''small business concern'' under section 3 of the Small Business Act, unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the **Federal Register.**

[16] The RFA defines the term ''small organization'' means any not-for-profit enterprise which is independently owned and operated and is not dominant in its field, unless an agency establishes, after opportunity for public comment, one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the **Federal Register;**

[17] The RFA defines small governmental jurisdiction ''means governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand, unless an agency establishes, after opportunity for public comment, one or more definitions of such term which are appropriate to the activities of the agency and which are based on such factors as location in rural or sparsely populated areas or limited revenues due to the population of such jurisdiction, and publishes such definition(s) in the **Federal Register.**''

Preliminary Initial Regulatory Flexibility Analysis

The Regulatory Flexibility Act of 1980 (Pub. L. 96–354) establishes ''as a principle of regulatory issuance that agencies shall endeavor, consistent with the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration.''

Under the RFA, we are required to consider if this rule will have a significant economic impact on a substantial number of small entities. Agencies must perform a review to determine whether a rule will have such an impact. If the agency determines that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA. Under Section 603(b) of the RFA, the Initial Regulatory Flexibility Analysis (IRFA) must provide and address:

- A description of the reasons why action by the agency is being considered;
- A succinct statement of the objectives of, and legal basis for, the proposed rule;
- A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;
- A description of the projected reporting, recordkeeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;
- An identification, to the extent practicable, of all relevant Federal rules which may duplicate, overlap or conflict with the proposed rule;
- A description of any significant alternatives to the proposed rule which accomplish the stated objectives of the applicable statutes and which minimize any significant economic impact of the proposed rule on small entities.

The term ''small entities'' comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000. The rule affects only small private entities. The following describes the Initial Regulatory Flexibility Act (TRFA) process for this rule.

We determined that the rule affects a variety of small private entities and therefore, based on the requirements mentioned above, we have prepared the following IRFA assessing the impact on small entities for this proposed rule. The analysis presented below addresses the issues specific to small entities that we have not addressed elsewhere in this RA

5.2 IRFA Requirements

5.2.1 Descriptions of Reasons Why Action of by the Agency Is Being Considered

Agencies take regulatory action for various reasons, one being the failure of the market to reach the socially optimal outcome. This can occur when there are economic incentives lacking for industry to pursue that outcome and such market failures are the impetus for this proposed rule. A negative externality is the byproduct of a transaction between two parties that is not accounted for in the transaction. Vessels and commercial diving operations that operate with lower safety standards may cause harm or increased risk of harm without accounting for the consequences to third parties, who do not directly participate in the business transactions of the affected entities. These costs are not borne by the responsible entities and are therefore external to the business decisions of the responsible entity. Section 4.2 describes the externality addressed by this rule.

Objectives of, and Legal Basis for, the Proposed Rule

The purpose of this rulemaking is to clarify and update our existing commercial diving regulations to reflect current industry best practices and to facilitate the use of approved third-party organizations (TPOs) in ensuring regulatory compliance. There has been no update since the 1978 original diving rules.

In addition, a series of reports on commercial diving safety demonstrated a need for updating USCG commercial diving regulations. These reports were developed in response to a series of commercial diving accidents that gained major public attention starting with one in 1996. The report titled ''Investigation into the Circumstances Surrounding the Commercial Diving Accident Onboard the Mobile Offshore Diving Unit Cliff's Drilling Rig No. 12 on March 4, 1996 with the Loss of Life'' influenced the Coast Guard to improve its regulations for commercial diving. That report, released in March, 2001, and also known as the RIG 12 Report, started a

process that has slowly gained momentum these past few years. The most recent findings, the 2008 National Offshore Safety Advisory Committee (NOSAC) report, provided Coast Guard with additional appropriate information regarding the industry and its safety efforts. The objective of the proposed rule is to establish safety regulations governing the inspection, standards, and operation of commercial diving operations. The proposed rule would promote safer work practices and reduce casualties in commercial diving operations by ensuring that those operations adhere to recommended safety standards and operational protocols.

The statutory bases for the Coast Guard's rulemaking are located in: 33 U.S.C. 1509(b), which requires safety regulations for deepwater ports; 43 U.S.C. 1333(d)(1), which permits safety regulations for Outer Continental Shelf (OCS) facilities and their equipment; 46 U.S.C. 3306, which requires regulations to implement subtitle II of Title 46 of the U.S. Code with respect to inspected vessels, including offshore supply vessels (OSVs) and their equipment; 46 U.S.C. 3703, which requires safety and environmental protection regulations for liquid bulk dangerous cargo carriers and their equipment, to be issued after consultation with Federal, State, and local governments and with private sector entities; and 46 U.S.C. 6101, which requires regulations for reporting and investigating marine casualties. These statutes confer regulatory authority on the Secretary of Homeland Security, who has delegated this authority to the Coast Guard; DHS Delegation No. 0170.1(75), (90), and (92). In addition, we are conducting this rulemaking in accordance with a December 19, 1979, Memorandum of Understanding between the Coast Guard and the Occupational Safety and Health Administration (OSHA), which regulates commercial diving operations conducted near shore or in U.S. internal waters.

Description and Estimate of the Number of Small Entities to Which the Proposed Rule Will Apply

5.2.3.1 Data Development

We used MISLE owner and operator name and address information as well as ADCI member information to research public databases (MANTA) for entity type (subsidiary or parent company), primary line of business, employee size, revenue, and other information.[18] We matched this information to the Small Business Administration's ''Table of Small Business Size Standards'' to determine if an entity is small in its primary line of business as classified in the North American Industry Classification System (NAICS).[19]

ADCI member data and Coast Guard data shows that there are 87 entities engaging in marine oriented commercial diving in the 2009–2011 timeframe. We acknowledge that only 75 diving firms belong to the ADCI.[20] USCG estimates that number of non-ADCI firms to be 12 based on our total population estimate (see affected population section for details). We found revenue and employment data for 45 firms that were ADCI in origin. Of the 45 firms, 37 were determined to be small businesses according to Small Business Administration standards. We assume that entities without small business data are small. In Table 12, we provide a summary of the small business data. As a result of our analysis, we concluded that small entities make up approximately 79 percent of the total affected marine population ((37 known small firms + 10 estimated and likely small firms + 30 firms with no revenue data)/87 total marine firms).

TABLE 12—FIRM DATA DEVELOPMENT

Firm type	Number of firms
Marine Commercial Marine Diving Firms in ADCI	75
Revenue and Employment Info	45
Number of Small Business Firms Based on Available Data	37

Source: USCG Calculations.

Table 13 provides small entity information, in the detail of the NAICS Code industries affected by this rule.

TABLE 13—SMALL ENTITIES BY NAICS CODES WITH SBA SIZE STANDARDS

NAICS Codes	Description	SBA Size standards (≤$M)	Number of small entities *	Percent of small entities
236220	Commercial & Inst. Building Construction	33.5	1	4.2
237990	Other Heavy and Civil Engineering Cons	33.5	3	12.5
238910	Site Preparation Contractors	14	5	20.8
541330	Marine Engineering and Naval Architecture	18.5	1	4.2
541990	All Other Prof., Scientific & Tech. Services	7	11	45.8
561499	All Other business Support Services	7	1	4.2
561990	All Other Support Services	18.5	2	8.3
Total			24	100

Source: USCG Calculations.
* ADCI Firms identified with revenue data.

Industries Affected by the Proposed Rule

A brief description of the industries[21] most affected by this proposed rule is presented as follows:

236220 Commercial and Institutional Building Construction—This industry comprises establishments primarily responsible for the construction (including new work, additions, alterations, maintenance, and repairs) of commercial and institutional buildings and related structures, such as stadiums, grain elevators, and indoor swimming facilities. This industry includes establishments responsible for the on-site assembly of modular or prefabricated commercial and institutional buildings. Included in this

[18] We used information and data from Manta (*http://Manta.com*).

[19] The SBA lists small business size standards for industries described in the North American Industry Classification System (NAICS). See *http://www.smallbusinessnotes.com/fedgovernment/sba/13cfr121/201-4849.html* (as of April 7, 2008).

[20] See commercial dive firm population calculation in Appendix B.

[21] These descriptions were excerpted from the U.S. Census Bureau. (*http://www.census.gov/cgi-bin/sssd/naics/naicsrch*).

industry are commercial and institutional building general contractors, commercial and institutional building for-sale builders, commercial and institutional building design-build firms, and commercial and institutional building project construction management firms.

237990 Other Heavy and Civil Engineering Construction—This industry comprises establishments primarily engaged in heavy and engineering construction projects (excluding highway, street, bridge, and distribution line construction). The work performed may include new work, reconstruction, rehabilitation, and repairs. Specialty trade contractors are included in this group if they are engaged in activities primarily related to engineering construction projects (excluding highway, street, bridge, distribution line, oil and gas structure, and utilities building and structure construction). Construction projects involving water resources (*e.g.,* dredging and land drainage), development of marine facilities, and projects involving open space improvement (*e.g.,* parks and trails) are included in this industry.

238910 Site Preparation Contractors—This industry comprises establishments primarily engaged in site preparation activities, such as excavating and grading, demolition of buildings and other structures, and septic system installation. Earth moving and land clearing for all types of sites (*e.g.,* building, non-building, and mining) are included in this industry. Establishments primarily engaged in construction equipment rental with operator (except cranes) are also included.

541330 Engineering Services—This industry comprises establishments primarily engaged in applying physical laws and principles of engineering in the design, development, and utilization of machines, materials, instruments, structures, processes, and systems. The assignments undertaken by these establishments may involve any of the following activities: Provision of advice, preparation of feasibility studies, preparation of preliminary and final plans and designs, provision of technical services during the construction or installation phase, inspection and evaluation of engineering projects, and related services.

541990 All Other Professional, Scientific, and Technical Services—This industry comprises establishments primarily engaged in the provision of professional, scientific, or technical services (except legal services; accounting, tax preparation, bookkeeping, and related services; architectural, engineering, and related services; specialized design services; computer systems design and related services; management, scientific, and technical consulting services; scientific research and development services; advertising, public relations and related services; market research and public opinion polling; photographic services; translation and interpretation services; and veterinary services).

561499 All Other Business Support Services—This U.S. industry comprises establishments primarily engaged in providing business support services (except secretarial and other document preparation services; telephone answering and telemarketing services; private mail services or document copying services conducted as separate activities or in conjunction with other office support services; monetary debt collection services; credit reporting services; repossession services; and court reporting and stenotype recording services).

561990 All Other Support Services—This industry comprises establishments primarily engaged in providing day-to-day business and other organizational support services (except office administrative services, facilities support services, employment services, business support services, travel arrangement and reservation services, security and investigation services, services to buildings and other structures, packaging and labeling services, and convention and trade show organizing services).

Census Data by NAICS

Table 5–3 presents census data for selected industries in Table 14. The Small Business Administration uses industry NAICS to determine if an entity is small based on their revenue data. The table below provides a distribution of the number of entities per industry by revenue.

TABLE 14—DISTRIBUTION OF FIRMS BY REVENUE

NAICS Code	Industry title	Number of entities by revenue						
		$0–$99k	$100k–$500k	$500k–$1M	$1M–$5M	$5M–$10M	$10M+	Grand total
236220	Commercial and Inst. Building Construction.	2,373	9,805	5,695	11,601	3,319	4,415	37,208
237990	Other Heavy and Civil Engineering Construction.	1,463	4,504	1,770	2,083	339	343	10,502
238910	Site Preparation Contractors	3,968	14,725	5,091	5,217	887	608	30,496

Source: US Census Bureau 2002. (*http://www.census.gov/econ/census02/guide/INDRPT23.HTM*).

Revenue Impact on Small Entities

The regulatory costs in this rule (including Manning, Drills, Audits, Records & Documentation and Medical Examinations) are evaluated in total in the following conventional IRFA analysis. To estimate the revenue impact on the identified small businesses, we followed guidance from the U.S. Small Business Administration's Office of Advocacy's ''A Guide for Government Agencies: How to Comply with the Regulatory Flexibility Act.'' We compared the total cost per business to the revenue data collected to assess the impact of the rule to those businesses. Using this information we were able to estimate the impact as a percentage of revenue for the affected firms.

As a result of our analysis, we concluded that small entities with a significant impact likely comprise 68 percent of the small entity population evaluated. Of the 37 small entities with available business data, we determined that 32 percent of small entities would have an annual cost-to-revenue impact of less than 1 percent. Further, we estimated that 41 percent of the small entities would have a cost-to-revenue impact between 1 and 3 percent and 27 percent would have an impact equal to or greater than 3 percent. These results are summarized in Table 15. We estimate 68 percent of small entities would have an impact greater than 1 percent from a cost to revenue ratio perspective.

TABLE 15—REVENUE IMPACTS ON SMALL ENTITIES

Impact	Sample	Percentage
0% ≤ Impact ≤ 1%	12	32
1% > Impact < 3%	15	41
≥ 3% Impact	10	27
Total	37	100

Source: USCG Calculations in Appendix B.

Description of the Projected Reporting, Recordkeeping, and Other Compliance Requirements of Small Entities

The Coast Guard expects new reporting or record keeping requirements resulting from this rule. The proposed rule impacts commercial marine diving operations under Coast Guard jurisdiction and requires each operation perform documentation preparation and maintenance tasks that fall under the category of reporting and recordkeeping. This documentation provides a historical record of when a piece of equipment was inspected or serviced and by whom. The process will also include the documentation of new equipment as often as new equipment is added to a firm's asset base. In addition, the documentation also takes into account logbook entries of diving activities as well as maintenance of logbooks, audit reporting, and operations manuals.

Duplication With Other Federal Rules

There are no relevant Federal rules that may duplicate, overlap, or conflict with the proposed rule. OSHA has commercial diving responsibility to the 3-mile limit, and Coast Guard has responsibility beyond the 3-mile limit, and also for any activity off of a Coast Guard inspected vessel within the 3-mile limit. The latter is composed of most of the non-Gulf of Mexico commercial divers discussed earlier.

Description of Any Significant Alternatives to the Proposed Rule

The Coast Guard considered four alternatives to the NPRM alternative. A description of these alternatives is presented in Chapter 1. In general, safety rules do not lend themselves to alternatives favoring smaller entities. Being a small entity does not change necessarily the safety requirement.

Three alternatives involved a different regulatory approach from a status quo and ranged from involving the IMO in a global rulemaking to a consolidation of OSHA and US Coast Guard rules. All were rejected for reasons presented in Chapter 1.

SBREFA Compliance

In accordance with the Regulatory Flexibility Act (5 U.S.C. 601–612) and section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121), the Coast Guard considered whether this rulemaking would have a significant economic impact on a substantial number of small entities. The term ''small entities'' comprises small business, not-for-profit organizations and governmental jurisdictions with populations of less than 50,000. In reviewing the potential costs of compliance and the relative impact on a small business' revenue, the Coast Guard cannot certify the proposed rulemaking would not have a significant economic impact on a substantial number of small entities.

The Coast Guard will help small entities understand the proposed rulemaking so that they can better evaluate its effect on them and participate in the rulemaking process. The preamble of the proposed rulemaking provides small businesses or organizations an opportunity to comment and lists a point of contact for any questions concerning the proposed rulemaking's provisions or options for compliance.

Executive Order 13272: Consideration for Small Entities

Section 1 of Executive Order 13272 directs Federal agencies to establish procedures and policies to promote compliance with the Regulatory Flexibility Act. It also requires Federal agencies to review thoroughly draft rules to assess and take appropriate account of the potential impact on small businesses, small governmental jurisdictions, and small organizations, as provided by the Act.

Executive Order 13272 requires Federal agencies to notify the Chief Counsel for Advocacy of the Small Business Administration of any proposed rulemakings that may have a significant economic impact on a substantial number of small entities. The proposed rulemaking is anticipated to have a significant economic impact on a substantial number of small entities. USCG will seek input from the Chief Counsel for Advocacy of the Small Business Administration in the promulgation of this rulemaking.

The Coast Guard solicits comments from Advocacy on the proposed rulemaking and will give every appropriate consideration to any comments provided by Advocacy on the proposed rulemaking. Similarly, USCG has proffered a comment period to small entities in compliance with the Executive Order and relevant laws and regulations.

Small businesses are encouraged to contact the agency for more information on the proposed rulemaking. For questions on this proposed rulemaking, call Ken Smith at the US Coast Guard (202) 372–1413. The public may also write the Coast Guard at the following address: U.S. Coast Guard Headquarters, 2100 Second Street SW., Washington, DC 20593–0001.

C. Assistance for Small Entities

Under Section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121), we want to assist small entities in understanding this proposed rule. If you think that your business, organization, or governmental jurisdiction qualifies as a small entity and you have questions concerning its provisions or options for compliance, please consult Mr. Ken Smith, U.S Coast Guard, using the contact information listed above. Small businesses may send comments on the actions of Federal employees who enforce, or otherwise determine compliance with Federal regulations to the Small Business and Agriculture Regulatory Enforcement Ombudsman and the Regional Small Business Regulatory Fairness Boards. The Ombudsman evaluates these actions annually and rates each agency's responsiveness to small business. If you wish to comment on actions by Coast Guard employees, call 1–888–REG–FAIR (1–888–734–3247). The Coast Guard will not retaliate against small entities that question or complain about this proposed rulemaking or any policy or action of the Coast Guard.

The Coast Guard Office of Domestic Compliance has prepared a notice to be

circulated to the general public and to be placed on the Coast Guard's Web site to assist small businesses and other interested parties in understanding the proposed rulemaking. The Coast Guard plans to continue its coordination and communication with maritime organizations such as the Chamber of Shipping of America and other ship owner associations so that they may inform and assist their respective members with understanding the rule.

In compliance with Executive Order 13563,[22] USCG will offer a public comment period of at least 60 days. Information about the proposed rule will be provided to USCG contacts as well as through **Federal Register** notice and press releases to encourage public participation.

D. Collection of Information

This proposed rule would call for a new collection of information under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520). As defined in 5 CFR 1320.3(c), ''collection of information'' comprises reporting, recordkeeping, monitoring, posting, labeling, and other similar actions. The title and description of the new information collection, a description of those who must collect the information, and an estimate of the total annual burden follow. The estimate covers the time for reviewing instructions, searching existing sources of data, gathering and maintaining the data needed, and completing and reviewing the collection.

Title: Marine Occupational Health and Safety Standards for Commercial Diving Operations—46 CFR 197 Subpart B.

OMB Control Number: 1625–NEW.

Summary of the Collection of Information: This proposed rule would include reporting and record keeping requirements ranging from updating the operations manual, maintaining and periodically updating a log book, reporting and storing examination scores and certifications, and maintaining records of equipment inspections. The collection of information would aid the regulated public in assuring safe practices associated with commercial diving operations.

Need for Information: The Coast Guard needs this information to determine whether an entity meets the regulatory requirements.

Proposed Use of Information: The Coast Guard would use this information to determine compliance with the regulatory requirements.

Description of the Respondents: The respondents are owners and operators of U.S. commercial diving operations.

Number of Respondents: The burden of this proposed rule for this collection of information includes certifications, procurement of written materials, preparation of records, and records of inspections. This collection of information applies to owners/operators of commercial diving operations. We estimate the maximum number of respondents to be 87.

Frequency of Responses: This proposed rule would vary the number of responses each year by requirement. Details are provided in the preliminary regulatory analysis.

Burden of Response: The burden of response for each regulatory requirement varies. Details are provided in the preliminary regulatory analysis.

Estimate of Total Annual Burden: We estimate an annual burden of 6,059 hours for the industry.

As required by the Paperwork Reduction Act, we will submit a copy of this proposed rule to OMB for its review of the collection of information.

We ask for public comment on the proposed collection of information to help us determine how useful the information is; whether it can help us perform our functions better; whether it is readily available elsewhere; how accurate our estimate of the burden of collection is; how valid our methods for determining burden are; how we can improve the quality, usefulness, and clarity of the information; and how we can minimize the burden of collection.

If you submit comments on the collection of information, submit them both to OMB and to the Docket Management Facility where indicated under **ADDRESSES**, by the date under **DATES**.

You need not respond to a collection of information unless it displays a currently valid control number from OMB. Before the Coast Guard could enforce the collection of information requirements in this proposed rule, OMB would need to approve the Coast Guard's request to collect this information.

E. Federalism

A rule has implications for federalism under Executive Order 13132, Federalism, if it has a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. We have analyzed this rule under that Order and have determined that it is consistent with the fundamental federalism principles and preemption requirements described in Executive Order 13132. Our analysis is explained below.

It is well settled that States may not regulate in categories reserved for regulation by the Coast Guard. It is also well settled, now, that all of the categories covered in 46 U.S.C. 3306, 3703, 7101, and 8101 (design, construction, alteration, repair, maintenance, operation, equipping, personnel qualification, and manning of vessels), as well as the reporting of casualties and any other category in which Congress intended the Coast Guard to be the sole source of a vessel's obligations, are within the field foreclosed from regulation by the States. (See the decision of the Supreme Court in the consolidated cases of *United States* v. *Locke and Intertanko v. Locke,* 529 U.S. 89, 120 S.Ct. 1135 (March 6, 2000)). This proposed rule regulates equipment and operations for commercial diving conducted from inspected vessels in order to promote the safety of life. States may not regulate within this category, and therefore, this rule is consistent with the principles of federalism and preemption requirements in Executive Order 13132. Additionally, Congress specifically granted the authority to regulate artificial islands, installations, and other devices permanently or temporarily attached to the OCS and in the waters adjacent thereto as it relates to the safety of life to the Secretary of the Department in which the Coast Guard is operating. This includes floating installations and other devices engaged in OCS activities. 43 U.S.C. 1333(d)(1) states that the Secretary ''shall have authority to promulgate and enforce such reasonable regulations with respect to lights and other warning devices, safety equipment, and other matters relating to the promotion of safety of life and property on the artificial islands, installations, and other devices . . . as he may deem necessary.'' As this proposed rule would regulate equipment and operations to ensure safety of life for commercial diving

[22] The Executive Order directs Federal agencies to take action to use and encourage public participation; it states ''Regulations shall be adopted through a process that involves public participation. To that end, regulations shall be based, to the extent feasible and consistent with law, on the open exchange of information and perspectives among State, local, and Tribal officials, experts in relevant disciplines, affected stakeholders in the private sector, and the public as a whole.''

In accordance with Executive Order 13563, USCG solicited public input on the current voluntary compliance of the regulated public on several of the proposed provisions. This action was limited due to the restrictions of the Paperwork Reduction Act for which contacts with the public exceeding nine contacts on the same question must be approved by OMB. In addition, a Notice of Inquiry was issued in the **Federal Register** in January 2012.

being conducted from such OCS installations, it falls within the scope of authority Congress granted exclusively to the Secretary. This authority has been delegated to the Coast Guard and is exercised in this proposed rule. Therefore, since the States may not regulate within this category, preemption under Executive Order 13132 is not an issue.

Finally, Congress granted the authority to regulate deepwater ports to the Secretary of Transportation. 33 U.S.C. 1509(b) states that the Secretary of Transportation ''shall issue and enforce regulations with respect to lights and other warning devices, safety equipment, and other matters relating to the promotion of safety of life and property in any deepwater port and the waters adjacent thereto.'' When the Coast Guard was an agency within the Department of Transportation, the authority to issue regulations with respect to safety on deepwater ports was delegated to the Coast Guard. See 49 CFR 1.46(s) (2002). The Homeland Security Act of 2002, Public Law 107–296, transferred the Coast Guard to the Department of Homeland Security. Pursuant to the Homeland Security Act, authorities that were delegated to the Coast Guard remained intact during this transfer by operation of law. The authority was then delegated to the Commandant of the Coast Guard through Department of Homeland Security Delegation 0170.1. Since this rule regulates equipment and operation to ensure safety for commercial diving being conducted from deepwater ports, it falls within the scope of authority that has been transferred and delegated to and exercised by the Coast Guard.

F. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531–1538) requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of $100,000,000 (adjusted for inflation) or more in any one year. Though this proposed rule would not result in such an expenditure, we do discuss the effects of this rule elsewhere in this preamble.

G. Taking of Private Property

This proposed rule would not cause a taking of private property or otherwise have taking implications under Executive Order 12630, Governmental Actions and Interference with Constitutionally Protected Property Rights.

H. Civil Justice Reform

This proposed rule meets applicable standards in sections 3(a) and 3(b)(2) of Executive Order 12988, Civil Justice Reform, to minimize litigation, eliminate ambiguity, and reduce burden.

I. Protection of Children

We have analyzed this proposed rule under Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks. This proposed rule is not an economically significant rule and would not create an environmental risk to health or risk to safety that might disproportionately affect children.

J. Indian Tribal Governments

This proposed rule does not have tribal implications under Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, because it would not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

K. Energy Effects

We have analyzed this proposed rule under Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use. We have determined that it is not a ''significant energy action'' under that order because it is not a ''significant regulatory action'' under Executive Order 12866 and is not likely to have a significant adverse effect on the supply, distribution, or use of energy. The Administrator of the Office of Information and Regulatory Affairs has not designated it as a significant energy action. Therefore, it does not require a statement of energy effects under Executive Order 13211.

L. Technical Standards

The National Technology Transfer and Advancement Act (15 U.S.C. 272 note) directs agencies to use voluntary consensus standards in their regulatory activities unless the agency provides Congress, through the Office of Management and Budget, with an explanation of why using these standards would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.,* specifications of materials, performance, design, or operation; test methods; sampling procedures; and related management systems practices) that are developed or adopted by voluntary consensus standards bodies. The proposed regulations use voluntary consensus standards developed by ADCI and would allow commercial diving operators to apply for equivalency determinations if they comply with similar voluntary consensus standards used by other organizations.

M. Environment

We have analyzed this proposed rule under Department of Homeland Security Management Directive 023–01 and Commandant Instruction M16475.lD, which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321–4370f), and have made a preliminary determination that this action is one of a category of actions that do not individually or cumulatively have a significant effect on the human environment. A preliminary environmental analysis checklist supporting this determination is available in the docket where indicated under the ''Public Participation and Request for Comments'' section of this preamble. This rule is likely to be categorically excluded under section 2.B.2, figure 2–1, paragraphs (34)(a), (c), (d) and (e) of the Instruction and 6(a) of the **Federal Register**, Vol. 67, No. 141, Tuesday, July 23, 2002, page 48243. This proposed rule involves regulations that are procedural, involving reporting and recordkeeping requirements; regulations concerning the training and qualifying of maritime personnel; regulations concerning manning and equipping of vessels; regulations concerning equipment approval and carriage requirements; and regulatory actions involving vessel operation safety standards. We seek any comments or information that may lead to the discovery of a significant environmental impact from this proposed rule.

List of Subjects

46 CFR Part 8

Administrative practice and procedure, Incorporation by reference, Organization and functions (Government agencies), Reporting and recordkeeping requirements, Vessels.

46 CFR Part 197

Benzene, Diving, Marine safety, Incorporation by reference, Occupational safety and health, Reporting and recordkeeping requirements, Vessels.

For the reasons discussed in the preamble, the Coast Guard proposes to amend 46 CFR parts 8 and 197 as follows:

PART 8—VESSEL INSPECTION ALTERNATIVES

■ 1. Revise the authority citation for part 8 to read as follows:

Authority: 46 U.S.C. 3103, 3306, 3316, 3703; Department of Homeland Security Delegation No. 0170.1(92.a), (92.b).

■ 2. Amend § 8.320 as follows:
■ a. In paragraph (b)(13), remove the word ''and'';
■ b. In paragraph (b)(14), after the word ''Certificate;'', remove the period and add in its place ''; and''; and
■ c. Add paragraph (b)(15).
The addition reads as follows:

§ 8.320 Classification society authorization to issue international certificates.

* * * * *

(b) * * *

(15) International Diving System Safety Certificate.

* * * * *

PART 197—GENERAL PROVISIONS

■ 3. Revise the authority citation for part 197 to read as follows:

Authority: 33 U.S.C. 1509; 43 U.S.C. 1333; 46 U.S.C. 3306, 3703, 6101; Department of Homeland Security Delegation No. 0170.1 (75), (90), (92.b), (92.d).

■ 4. Revise subpart B to read as follows:

Subpart B—Commercial Diving Operations

Sec.

General

Audits

Operational Duties

Personnel Training and Qualifications

Health and Medical Requirements

Specific Operations

Equipment

Dive Team Staffing

Subpart B—Commercial Diving Operations

General

§ 197.200 Applicability.

(a) Except as provided in paragraph (b) of this section, this subpart applies to commercial diving operations taking place at or from any—

(1) Deepwater port or safety zone thereof as defined in 33 CFR part 150;

(2) Artificial island, installation, or other device on the Outer Continental Shelf (OCS) as defined in 33 CFR part 140 and their safety zones defined in 33 CFR part 147;

(3) Vessel operating on the navigable waters of the United States, as defined in 33 CFR part 2;

(4) United States vessel required to have a certificate of inspection issued by the Coast Guard, including a mobile offshore drilling unit regardless of its geographic location or;

(5) Foreign-flagged vessel engaged in an OCS activity as defined in 33 CFR part 140, or connected to a deepwater port as defined in 33 CFR part 150.

(b) This subpart does not apply to commercial diving operations performed solely for—

(1) Marine scientific research and development purposes by an educational institution;

(2) Research and development for the advancement of diving equipment and technology; or

(3) Search and rescue or related public safety purposes conducted by or under the control of a governmental agency.

(c) A commercial diving operation may deviate from the requirements of this subpart to the extent necessary to prevent or minimize a situation that is likely to cause death, injury, or major environmental damage. The circumstances leading to the situation, the deviations made, and the corrective action taken, if appropriate, to reduce the possibility of recurrence must be recorded by the diving supervisor in the logbook required by 46 CFR 197.221(c)(10).

(d) The owner or operator of a foreign-flagged vessel to which this part applies shall submit documentation specified in this section to the cognizant OCMI before that vessel enters the navigable waters of the United States, engages in OCS activities, or performs work connected to a deepwater port. Acceptable forms of documentation are as follows:

(1) An international diving systems safety certificate issued by the vessel's flag administration or a party acting on behalf of the flag administration.

(2) Certification from the vessel's flag administration or party acting on behalf of the flag administration that the vessel complies with the regulations found in this part or the requirements of a recognized classification society that has been determined by the Commandant, Office of Design and Engineering (CG–ENG) to provide an equivalent level of safety.

§ 197.201 Definitions.

As used in this subpart—

Accredited school means a commercial diving educational

organization recognized by the Association of Commercial Diving Educators as meeting the standards of ANSI/ACDE–001–2009.

Alcohol means any form or derivative of ethyl alcohol (ethanol).

Approved third-party organization means an organization approved by the Commandant.

Audit has the meaning defined in 46 CFR 197.209.

Auditor means a person meeting the qualifications set forth in 46 CFR 197.209(d).

Barotrauma means injury of a body part or organ as a result of changes in barometric pressure.

Bell means a compartment either at ambient pressure (open bell) or pressurized (closed bell) that allows a diver to be transported to and from an underwater work site, allows the diver access to the surrounding environment, and is capable of being used as a refuge during diving operations.

Breathing gas means a gas supplied to a diver for aspiration.

Commandant means the Office of Commercial Vessel Compliance, Commandant (CG–CVC), 2703 Martin Luther King Jr. Ave. SE., Stop 7501, Washington, DC 20593–7501 unless otherwise specified.

Commercial diver means a diver engaged in underwater work for hire, excluding sport, fishing, and recreational diving or the instruction or supervision thereof.

Commercial diving employee means any person providing commercial diving services or support to a commercial diving operator, and includes any commercial diver employed by or working on behalf of a commercial diving operator.

Commercial diving operation means all activities in support of a commercial diver.

Commercial diving operator or *CDO* means any person or entity that employs, contracts, or secures the services of commercial divers to undertake commercial diving operations.

Cylinder means a pressure vessel for the storage of gas under pressure.

Dangerous drug means a narcotic drug, a controlled substance, or a controlled substance analog, as defined in section 102 of the Comprehensive Drug Abuse and Control Act of 1970, 21 U.S.C. 802.

Decompression chamber means a pressure vessel for human occupancy, such as a surface decompression chamber, closed bell, or deep diving system especially equipped to recompress, decompress, and treat divers.

Decompression table means a profile or set of profiles of depth-time relationships for ascent rates and breathing mixtures to be followed after a specific depth-time exposure or exposures.

Deepwater port has the meaning defined in 33 CFR 148.5.

Deficiency means a failure to meet minimum requirements of an applicable statute or regulation.

Depth means the depth of a dive, the maximum pressure expressed in feet of seawater attained by a diver.

Dive means work performed by a diver or the activity that is taken in support of that work and that is the subject of a dive plan.

Dive location means a distinct geographic location or a portion of a vessel or facility from which a diving operation is conducted.

Dive mode or *diving mode* means a type of diving defined by the equipment used and supported by the relevant procedures, techniques, and processes, and includes self-contained underwater breathing apparatus, saturation, surface-supplied air, or surface-supplied mixed-gas modes.

Dive plan is the written plan described in 46 CFR 197.220(i).

Dive planning meeting means the meeting described in 46 CFR 197.220(i).

Diver, unless otherwise modified, means a commercial diver working beneath the surface, exposed to hyperbaric conditions, and using underwater breathing apparatus.

Dive supervisor means the person responsible to the commercial diving operator for planning, resourcing, supervising, and approving a dive to ensure its safety and directly responsible for the safety and health of all dive team members during the dive.

Dive team means the working divers, dive tenders, standby divers, dive supervisors, persons in charge, life support and saturation technicians, and diver medical technicians, when provided, that are engaged in a specific diving operation.

Dive tender means a properly trained and certified individual acting (dive tending) in support of a working or standby diver.

Diving systems safety certificate means a certificate issued to a U.S. flag vessel subject to inspection under 46 U.S.C. 3301, or for a foreign flag vessel by or on behalf of its flag administration, pursuant to the International Code of Safety for Diving Systems;

Dynamic positioning or *DP* refers to systems designed to maintain a vessel in a fixed position and heading that incorporates computerized control systems, thrusters, propulsion machinery, and advanced tracking systems in order to maintain that fixed position.

External audit means an audit conducted by an approved third-party organization.

Facility means a deepwater port, or an artificial island, installation, or other device on the Outer Continental Shelf subject to Coast Guard jurisdiction.

FSW means feet of sea water (or equivalent static pressure head).

Hyperbaric condition means a pressure condition in excess of surface atmospheric pressure.

Internal audit means an audit that is conducted by a party that has a direct affiliation to the vessel, facility, owner or managing operator, or organization being audited.

Life support technician means a properly trained and certified dive support person responsible for the safe operation of a hyperbaric system, gas blending system, or gas control and delivery system, and who is responsible for providing for the medical wellness of the dive team.

Liveboating means the support of a surfaced-supplied diver from a vessel underway without DP ability.

Major non-conformity means an identifiable deviation that poses a serious threat to personnel or vessel safety, or a serious risk to the environment that requires immediate corrective action.

Marine casualty or accident means any casualty or accident as defined in 46 CFR 4.03–1.

Mixed-gas dive means a dive mode in which the diver in the water is supplied with a breathing gas other than air.

New dive location means a specific dive location from which no dive operation has been conducted in the last 90 days.

No-decompression limits means the depth-time limits of the no-decompression limits and repetitive dive group designation table for no-decompression air dives, U.S. Navy Diving manual or equivalent.

Non-conformity means an observed situation where objective evidence indicates the non-fulfillment of a specified requirement.

Objective evidence means quantitative or qualitative information, records, or statements of fact pertaining to safety or to the existence and implementation of a safety management system element, which is based on observation, measurement, or testing that can be verified. This information may include, but is not limited to, equipment certificates and maintenance documents, training records, repair

records, Coast Guard documents and certificates, surveys, or recognized class society reports.

OCS activity has the meaning defined in 33 CFR 140.10.

OCS facility has the meaning defined in 33 CFR 140.10.

Officer in Charge, Marine Inspection or OCMI means any person designated as such by the Commandant of the Coast Guard and delegated the authority to perform the functions described in 33 CFR 1.01–20.

Operations manual means the operations manual required by 46 CFR 197.223.

Person in charge or *PIC* means a vessel's master or the person acting or designated as such in accordance with § 197.221(a) of this subpart.

Pressure vessel means a container capable of withstanding an internal maximum working pressure of more than 15 psi(g).

Psi (g) means pounds per square inch (gauge).

Pressure vessel for human occupancy or *PVHO* means a pressure vessel that encloses a human being within its pressure boundary and includes diving bells, personnel transfer capsules, decompression chambers, recompression chambers, and hyperbaric chambers. The term does not include pressure vessels for human occupancy that may be subjected to external pressures in excess of 15 psi(g) but can only be subjected to maximum internal pressures of 15 psi(g) or less (*i.e.*, submersibles, or one atmosphere observation bells).

Procedure means an established series of actions, acts, or operations which must be executed in the same manner in order to achieve a uniform approach to compliance with applicable policies.

Risk management measure means the assignment of additional or different personnel, equipment, or other resources, the implementation of effective policies or practices, or any other measure appropriate for the management or reduction of risks that may be anticipated during a dive.

Safety management system means a structured and documented system enabling a commercial diving operation to effectively implement the commercial diving operator's safety and environmental protection policies and that is routinely exercised and audited in a way that ensures the policies and procedures are incorporated into the daily performance of the commercial diving operation.

Saturation diving means a dive mode that involves saturating a diver's tissues with an inert gas in the breathing mixture to allow an extension of bottom time without additional decompression.

Self-contained underwater breathing apparatus or *SCUBA* means a dive mode in which the diver is supplied with a compressed breathing mixture from diver-carried equipment.

Serious marine incident has the meaning defined in 46 CFR 4.03–2.

Third-party auditor means a person who conducts external audits for an approved third-party organization.

Third-party organization means an entity that may be approved by the Coast Guard to act on behalf of the Coast Guard for the purpose of verifying compliance with applicable requirements outlined in Titles 33 or 46 of the Code of Federal Regulations, and that is not directly connected to the Coast Guard, an owner or operator of a vessel, facility, or operation of a vessel or facility.

Unit, in the context of a unit on the Outer Continental Shelf, has the meaning defined in 33 CFR 140.10.

Vessel has the meaning given it by 33 CFR 140.10.

Working pressure means the pressure to which a pressure containment device is exposed at any particular instant during normal operating conditions.

§ 197.202 Incorporation by reference.

(a) Certain material is incorporated by reference into this subpart with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish notice of change in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at the U.S. Coast Guard by calling the Office of Regulations and Administrative Law at 202–372–3870 or emailing *HQS-SMB-CoastGuardRegulationsLaw@uscg.mil*, and is available from the sources listed below. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030 or go to *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*.

(b) Association of Diving Contractors International, 5206 Cypress Creek Parkway, Suite 202, Houston, TX 77069, *http://adc-int.org/*.

(1) International Consensus Standards for Commercial Diving and Underwater Operations, 6th Edition, 2010 (''ADCI Standards''), IBR approved for: 46 CFR 197.220, 197.222, 197.240, 197.242, 197.243, 197.244, 197.245, 197.250, 197.260, 197.261, 197.262, 197.263, 197.266, 197.267, 197.270, 197.275, 197.276, 197.277, 197.279, 197.280, 197.281, and 197.282.

(2) [Reserved]

(c) International Maritime Organization (IMO), 4 Albert Embankment, London SE1 7SR, United Kingdom, *http://www.imo.org*.

(1) IMO Resolution A.831(19), International Code of Safety for Diving Systems, 1995, IBR approved for 46 CFR 197.204.

(2) IMO Resolution A.692(17), Guidelines and Specifications for Hyperbaric Evacuation Systems, IBR approved for 46 CFR 197.270.

(d) American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016–5990, *http://www.asme.org/*.

(1) ASME PVHO–1–2013, Safety Standard for Pressure Vessels for Human Occupancy, 2013 (''ASME PVHO–1''), IBR approved for 46 CFR 197.277 and 197.286.

(2) ASME B31.1–2010, ASME Code for Pressure Piping, Power Piping, 2010 (''ASME B31.1''), IBR approved for 46 CFR 197.278 and 197.286.

(3) ASME National Board Inspection Code, NBBPVI, NB23–2011 (''ASME NBBPVI''), IBR approved for 46 CFR 197.286.

(e) American National Standards Institute (ANSI), 25 West 43rd Street, Fourth Floor, New York, NY 10036, *http://www.ansi.org*.

(1) ANSI/ISO 15618–1:2001, Qualification testing of welders for underwater welding—Part 1: Diver-welders for hyperbaric wet welding (''ANSI/ISO 15618''), IBR approved for 46 CFR 197.246.

(2) ANSI/ACDE–01–2009, Divers—Commercial Diver Training—Minimum Standards, (''ANSI/ACDE–01–2009''), IBR approved for 46 CFR 197.209, 197.243, and 197.246.

(f) Compressed Gas Association, 14501 George Carter Way, Suite 103, Chantilly, VA 20151–2923, *http://www.cganet.com/*.

(1) Publication G–4.1, Cleaning Equipment for Oxygen Service, 2009 (''Compressed Gas Association Publication G–4.1''), IBR approved for 46 CFR197.286.

(2) Publication G–7, Compressed Air for Human Respiration, 6th Edition, 2008, (Compressed Gas Association Publication G–7''), IBR approved for 46 CFR197.286.

(3) Publication G–7.1, Commodity Specification for Air, 6th Edition, 2011, (Compressed Gas Association Publication G–7.1), IBR approved for 46 CFR197.286.

(g) U.S. General Services Administration, One Constitution

Square, 1275 First St. NE., Washington, DC 20417, *http://www.gsa.gov/portal/category/100000.*

(1) Federal Specification, BB–N–411C, Nitrogen Technical, 2000 (''Federal Specification BB–N–411C''), IBR approved for 46 CFR 197.286.

(2) Federal Specification, Oxygen, Technical, Gas and Liquid, BB–O–925a, 1961 (''Federal Specification BB–O–925a''), IBR approved for 46 CFR 197.286.

(h) International Organization for Standardization (ISO), 1, ch. de la Voie-Creuse, CP 56–CH–1211 Geneva 20, Switzerland.

(1) ISO 9001–2008, American National Standard, Quality Management Systems—Requirements, IBR approved for 46 CFR 197.209 and 197.225.

(2) ISO 15618—2001, Qualification testing of welders for underwater welding—Part 1: Diver-welders for hyperbaric wet welding, IBR approved for 46 CFR 197.246.

(i) U.S. Government Printing Office, 723 North Capitol St. NW., Washington, DC 20401, *http://www.gpo.gov/.*

(1) U.S. Navy Diving Manual, 6th Edition, April 2008, IBR approved for 46 CFR 197.264 and 197.265.

(2) [Reserved]

§ 197.203 Equivalents.

(a) The Commandant may accept substitutes for equipment, materials, apparatus, arrangements, procedures, or tests required in this subpart if the substitute provides an equivalent level of safety.

(b) The person or entity receiving the equivalency determination must keep a copy of that determination and make it available to any of the person's or entity's employees, an approved third-party organization, or Coast Guard personnel upon request.

§ 197.204 Commercial diving operations conducted in foreign waters.

A U.S. vessel that is conducting commercial diving operations in foreign waters, and a foreign vessel that is conducting commercial diving operations on the OCS of the U.S., must have diving systems that comply with the International Code of Safety for Diving Systems (incorporated by reference, see 46 CFR 197.202) and possess a valid international diving systems safety certificate issued by the vessel's flag administration or a party acting on that flag administration's behalf. U.S. vessels needing an international diving systems safety certificate must contact a recognized classification society authorized by the Coast Guard to issue international certificates in accordance with 46 CFR 8.320.

§ 197.205 Enforcement.

(a) For the purpose of enforcing this subpart, and to the extent needed to verify compliance with this subpart, the Officer in Charge, Marine Inspection (OCMI) may at any time inspect the records and observe the operations of any commercial diving operator (CDO) or third-party organization (TPO), and may interview any employee or person working on behalf of the CDO or TPO.

(b) For noncompliance with this subpart, the OCMI may suspend or revoke a U.S. vessel's certificate of inspection in accordance with 46 CFR part 2, or may suspend a U.S. vessel's international diving systems safety certificate.

(c) Vessels, OCS facilities, or deepwater ports that do not comply with these regulations are subject to the following enforcement actions:

(1) The District Commander or the Captain of the Port (COTP) may prohibit a noncompliant vessel from engaging in commercial diving operations. A noncompliant vessel conducting commercial diving operations on the navigable waters of the United States, as defined in 33 CFR 2.36, is subject to orders and penalties authorized by the Ports and Waterways Safety Act and its implementing regulations.

(2) The OCMI may prohibit a noncompliant vessel or OCS facility from engaging in commercial diving operations. A noncompliant OCS facility, or vessel engaged in an OCS activity, is subject to penalties and orders authorized by the Outer Continental Shelf Lands Act and its implementing regulations.

(3) The OCMI may prohibit a noncompliant deepwater port from engaging in commercial diving operations. A noncompliant deepwater port, or a vessel connected to a deepwater port, is subject to penalties and orders authorized by the Deepwater Port Act and its implementing regulations.

§§ 197.206–197.208 [Reserved]

Audits

§ 197.209 Third-party audits.

(a) As used in this section, an ''audit'' means a systematic, independent, and documented process for obtaining audit evidence, which can be evaluated objectively to determine the extent to which audit criteria are fulfilled. An audit may be limited to random selection of a representative sampling throughout the system that presents the auditor with sufficient objective evidence of system compliance. It includes a thorough review of appropriate reports, documents, records, and other objective evidence to verify compliance with applicable regulations. It may include, but is not limited to—

(1) Examining records;

(2) Asking responsible persons how they accomplish specific tasks;

(3) Observing persons performing required tasks;

(4) Examining equipment to insure proper maintenance and operation; and

(5) Checking training records and work environments.

(b) This section establishes procedures for third-party organizations (TPOs) to obtain the Commandant's approval to perform audits on behalf of the Coast Guard for the purpose of determining regulatory compliance of vessels, personnel, and equipment with Coast Guard regulations issued under this part, and establishes criteria for the performance of those audits.

(c) A TPO that the Commandant approves may—

(1) Conduct audits of logs, records, documents, equipment, drills, or other data to verify compliance with applicable Coast Guard regulations;

(2) Conduct audits of specific vessel operations and interview a TPO's personnel to verify compliance with applicable Coast Guard regulations; and

(3) Issue reports detailing the results of audits.

(d) To receive the Commandant's approval to perform audits in accordance with this section, a TPO must demonstrate the skills and experience necessary to assess compliance with the requirements of this part. It must demonstrate, without consideration for any recreational diving experience, that each of its auditors has—

(1) Successfully completed a commercial diving training course meeting the requirements of ANSI/ACDE–01–2009 (incorporated by reference, see 46 CFR 197.202);

(2) Served as a diving supervisor overseeing the specific diving mode to be audited, with an auditor of commercial SCUBA, surface-supplied air, or mixed-gas diving having overseen at least 500 commercial dives in that mode and an auditor of saturation diving having overseen at least 100 commercial dives in that mode;

(3) Successfully completed a lead auditor/assessor course that meets the requirements of International Organization for Standardization (ISO) 9001–2008 (incorporated by reference, see 46 CFR 197.202) or a Coast Guard-recognized equivalent; and

(4) Either conducted at least eight audits within the past 5 years of a commercial diving operation utilizing a recognized consensus standard, or

successfully completed a required auditor apprenticeship consisting of at least four audits under the direction of a lead auditor.

(e) A TPO that the Commandant approves must notify the Commandant when it adds or removes an auditor. For each new auditor, the organization must demonstrate that the auditor qualifications specified in paragraph (c) of this section have been met.

§ 197.210 Internal audits.

(a) Each commercial diving operator (CDO), and vessel or facility owner that permits a commercial diving operation to take place on board, must perform an annual internal audit using one or more designated employees or persons contracted to perform the audit.

(b) The internal audit is not necessarily conducted as one event, and may be performed in segments over time, not to exceed 1 year.

(c) The internal audit must be of sufficient depth and breadth to ensure the CDO or vessel or facility owner that permits a commercial diving operation to take place on board has established adequate procedures and documentation to validate and maintain compliance with this subpart.

(d) Each internal auditor must have the authority to examine documentation, question personnel, examine vessel equipment, witness system testing, and observe personnel training as necessary to verify compliance.

§ 197.211 External audits.

(a) Each commercial diving operator (CDO), and vessel or facility owner that permits a commercial diving operation to take place on board, must have an external compliance audit conducted by an approved third-party organization at least twice in each 5-year period. Additionally, an external compliance audit must be conducted as soon as possible after any commercial diving casualty that is a serious marine incident.

(b) The external audit must be of sufficient depth and breadth to ensure that the CDO or vessel or facility owner that permits a commercial diving operation to take place on board complies with the requirements of this subpart.

(c) Each external auditor must be provided access to examine any requested documentation, question personnel, examine equipment, witness system testing, and observe personnel training, to the extent necessary to verify compliance with this subpart.

(d) The external auditor may broaden the scope of the audit if he or she finds a condition that is inconsistent with the records maintained or identifies an unsafe condition.

(e) The external auditor may verify compliance through a review of objective evidence and may conduct a visual sampling onboard vessels or facilities where commercial diving operations are conducted to determine whether or not the conditions onboard the vessel or at the facility are consistent with the records reviewed.

§ 197.212 Pre-audit notification.

(a) Each commercial diving operator (CDO) or vessel or facility owner that permits a commercial diving operation to take place on board must notify the cognizant Officer in Charge, Marine Inspection (OCMI) at least 5 working days before the start of any external audit conducted under 46 CFR 197.211.

(b) The OCMI may require that a Coast Guard representative accompany the auditor during part, or all, of an external audit.

(c) The Coast Guard may conduct an audit of the CDO or vessel or facility at any time.

§ 197.213 Audit reporting.

(a) An approved third-party organization conducting external audits in accordance with this subpart must submit an audit report to the cognizant Officer in Charge, Marine Inspection (OCMI) within 30 days after completing each audit under 46 CFR 197.211, except that any major non-conformity must be reported to the local OCMI upon completion of the audit.

(b) Each audit report must contain the name of the auditor, the audit results, and any continuing actions such as resolution of deficiencies and non-conformities.

(c) The TPO must keep each audit report for 5 years and make it available to the Coast Guard upon request.

(d) CDOs must retain copies of TPO audit reports and make them available for examination by the Coast Guard upon request.

§§ 197.214–197.219 [Reserved]

Operational Duties

§ 197.220 Commercial diving operators.

Each commercial diving operator (CDO) must ensure that—

(a) Commercial diving operations comply with or exceed the requirements of the ADCI Standards (incorporated by reference, see 46 CFR 197.202) as modified by this subpart;

(b) Each commercial diving operation or support function is conducted in a way that minimizes any prevailing or anticipated risk to life, property, or the environment;

(c) Each commercial diving operation is conducted with the required equipment and the proper operational procedures to ensure the safety of all commercial diving employees involved in the commercial diving operation;

(d) Each commercial diving employee taking part in a commercial diving operation receives written designation of the employee's individual roles and responsibilities for each commercial diving operation and has the equipment, knowledge, skills, experience, training, and certification necessary to perform the duties to which he or she is assigned;

(e) The name of the dive supervisor for each commercial diving operation is provided to the person in charge (PIC) of the vessel or facility before beginning the operation;

(f) Drills are conducted in accordance with table 197.220(f) in this section, and compliance documented by logging the date, location, nature, and scope of each drill and the name and job title of each drill participant;

TABLE 197.220(F)—DRILL REQUIREMENTS

Requirement	Detail
Ensure that each dive team member can perform his or her assigned dive team duties.	Drill at least once every 30 calendar days, before initiating a commercial diving operation at a new dive location, when adding a new member to the dive team, or whenever you change an emergency drill procedure or emergency response equipment described in the operations manual. Note: For each dive mode used, drill using the unique equipment, personnel, and operational procedures required by that mode.
Diver recovery	At least once every 90 days, drill on: (1) Deployment of standby divers; (2) recovery of a diver from depth to a decompression chamber and first aid station; and (3) for dive systems utilizing hyperbaric rescue chambers or hyperbaric rescue craft, a full launch and recovery drill at least every 90 days or when adding a new member to the dive team or when initiating a new dive location.

TABLE 197.220(F)—DRILL REQUIREMENTS—Continued

Requirement	Detail
Emergency rescue	Drill at least once every 30 calendar days. Ensure that personnel can successfully deploy the equipment and perform the procedures described in the operations manual for emergency rescue (it is not necessary to deploy the emergency aviation resources or vessels required to transport divers to offsite medical facilities).

(g) Each commercial diving employee's compliance with this subpart is documented, that the documentation is retained for at least 5 years, and that the documentation is made available upon request to the Coast Guard or approved third-party organizations operating under this subpart;

(h) The dive supervisor complies with this subpart and prepares and updates the operations manual described in 46 CFR 197.223; the operations manual is provided at the dive site; and all dive team members, including the dive supervisor, are trained in, familiar with, and compliant with the operations manual's contents;

(i) All dive team members participate in a dive planning meeting before each dive, that the meeting ensures that a dive plan is prepared specific to each dive identifying the person in charge of the vessel or facility, the dive supervisor, and the roles and responsibilities of all dive team members, the anticipated conditions and risks that could affect the dive and risk management measures implemented to reduce risks; and that each dive team member reviews and signs the plan to document participation in the meeting and agreement with the plan;

(j) All dive team members have access to approved documentation, manuals, guidance, policies, procedures, checklists, and any other publications for use in planning or conducting the dive and for properly using equipment in connection with the dive; and

(k) The local Officer in Charge, Marine Inspection is provided with a dive notice containing the contents specified in table 197.220(k) of this section at least 24 hours before any commercial diving operation begins.

TABLE 197.220(K)—DIVE NOTICE, REQUIRED CONTENTS

Content	Detail
Contact information	For the CDO, dive supervisor, and PIC: Name, telephone or e-mail, or other contact information.
Date and time	Scheduled start and end date and time.
Dive location	Geographic position (latitude and longitude).
Diving system safety certificate	Certificate number, date of expiration, flag administration, and issuing authority if other than the administration.
Mode	Mode of diving to be used.
Support platform	Name of each vessel or facility providing dive support.
Work	Description of work to be performed including maximum depth and exposure time.

§ 197.221 Persons in charge.

(a) The owner or operator of a vessel or facility must designate in writing an individual to be the person in charge (PIC) of the vessel or facility.

(b) Where a master is designated, the master is the PIC.

(c) The PIC must—

(1) Participate in the dive planning meeting and sign the dive plan;

(2) Not allow any commercial diving operation to begin until—

(i) The operation's dive supervisor has been designated;

(ii) The dive supervisor provides the PIC with a report on the nature and planned times of the planned operation; and the planned involvement of the vessel or facility, its equipment, and its personnel in the operation;

(3) Not permit any commercial diving operation involving dynamic positioning or liveboating to begin without first—

(i) Establishing a means of rapid communication with the dive supervisor while the diver is entering, in, or leaving the water; and

(ii) Ensuring a boat and crew for diver pickup is provided in the event of an emergency;

(4) Ensure that a boat and crew for SCUBA diver pickup is provided when SCUBA divers are not line-tended from the dive location;

(5) Coordinate the activities of the vessel or facility with the dive supervisor;

(6) Ensure that the vessel or facility equipment and personnel are kept clear of the dive location except after coordinating with the dive supervisor;

(7) Provide accurate and detailed plans of the area of the facility, infrastructure, or vessel that is the subject of the work to be performed;

(8) Ensure that any structures or components being worked on are prepared so as to minimize any danger that could pose a threat to the members of the dive team;

(9) Anticipate and monitor all conditions and risks that may affect the commercial diving operation, ensure the availability of risk management measures if needed, and terminate the operation if an unsafe condition exists; and

(10) Maintain a logbook and make it available to the Coast Guard or approved TPOs upon request. For vessels subject to 46 U.S.C. 11301, this may be the logbook required by that section and kept on form CG–706. The following must be included in the logbook:

(i) Date, time, and location at the start and completion of dive operations;

(ii) Approximate underwater and surface conditions (weather, visibility, temperatures, and currents);

(iii) Name of the dive supervisor;

(iv) General nature of work performed; and

(v) Maximum depth and exposure time.

§ 197.222 Dive supervisors.

Each dive supervisor for a commercial diving operation has the final authority to determine the required diving equipment, personnel, procedures, and diving modes needed to safely accomplish the intended task, and must—

(a) Comply with this subpart and the applicable requirements for dive supervisors and diving modes outlined in sections 3.0 and 4.0 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202) for the specific modes of diving for which supervision is provided;

(b) Ensure that diving operations conducted from a vessel or facility subject to this subpart comply with this subpart;

(c) Before beginning any commercial diving operation, give the person in charge (PIC) the report required by 46 CFR 197.221(c)(2)(ii), and coordinate with the PIC any changes that are made to that report;

(d) Anticipate and monitor all conditions and risks that may affect the dive, implement risk management measures as needed, and terminate the dive if necessary to ensure dive team safety;

(e) Conduct the dive planning meeting required by 46 CFR 197.220(i) and draft and sign the dive plan;

(f) Be properly trained and qualified to operate each diving system or mode used in the operation;

(g) Be able to read and communicate in a language clearly understood by all members of the dive team;

(h) Supervise and direct the actions of each dive team member;

(i) Coordinate with the PIC to ensure that clear and prompt notice of the commercial diving operation is given to any person, vessel, installation, or organization whose work could interfere with or affect the planned dive;

(j) Maintain an official dive log with information outlined in section 5.13 of the ADCI Standards and the—

(1) Dive mode used;

(2) PIC's name; and

(3) Name, date, time, treatment, circumstances, and extent of any fatality, injury, or illness that results in incapacitation of more than 72 hours or requires any dive team member to be hospitalized for more than 24 hours;

(k) Ensure that, for each diving operation deviating from the requirements of this subpart, the dive log records the—

(1) Circumstances leading to the situation;

(2) Deviation made; and

(3) Corrective action taken to reduce the possibility of recurrence;

(l) Keep a record in the dive log noting where and when testing occurred for each of the following, along with the test results—

(1) Medical kit check (monthly);

(2) Air compressor test;

(3) Breathing mixture check;

(4) Breathing supply system check;

(5) Cleaning of diving equipment for oxygen service, including which equipment was cleaned, the general cleaning procedure, and the names of persons involved;

(6) Breathing supply hose and system tests;

(7) Breathing gas supply system inspection;

(8) Depth gauge and timekeeping device test;

(9) Pressure vessel for human occupancy test and inspection;

(10) Diving equipment inspection;

(11) Pressure piping test and inspection; and

(12) Volume tank and cylinder test and inspection;

(m) Supervise the planning and execution of the diving operation, including the responsibility for the safety and health of the dive team; and

(n) Notify the PIC whenever decompression sickness or gas embolism is suspected or symptoms are evident, and provide a written report on the assessment of the decompression procedure that includes the following:

(1) Details of the investigation completed for each incident including dive and decompression profiles and the composition, depth, and time of breathing mixture changes;

(2) Symptoms, including depth and time of onset;

(3) Nature and results of the treatment;

(4) Evaluation of each incident based on the investigation, consideration of the past performance of the decompression table used, and individual susceptibility; and

(5) The corrective action taken to reduce the probability of recurrence.

§ 197.223 Operations manual.

(a) Each dive supervisor must provide the operations manual to the person in charge (PIC) prior to commencement of any diving operation and make it available at the dive location to all members of the dive team.

(b) The dive supervisor must modify the operations manual to reflect any change in the configuration or operation of the vessel or facility or in the specific diving operation as planned.

(c) The operations manual must provide for the safety and health of the divers, and must address the—

(1) Safety procedures and checklists for each diving mode used;

(2) Assignments and responsibilities of each dive team member for each diving mode used;

(3) Equipment procedures and checklists for each diving mode used;

(4) Dive team members' drills and training;

(5) Procedures for conducting a job safety analysis; and

(6) Procedures to be taken before, during, and after a dive for each diving mode conducted.

(d) The operations manual must also provide emergency procedures in the event of—

(1) Fire;

(2) Equipment failure;

(3) Adverse environmental conditions including, but not limited to, weather and sea state;

(4) Medical illness;

(5) Injuries; and

(6) Barotrauma.

(e) The operations manual must also provide procedures dealing with the use of—

(1) Hand-held power tools;

(2) Welding and burning equipment; and

(3) Explosives.

§ 197.224 Operational duties in the event of marine casualty or serious marine incident.

(a) In the event of a marine casualty or a serious marine incident the commercial diving operator must—

(1) Ensure that the commercial diving operation is suspended as soon as all actions have been taken to protect the safety of life and the environment, and resumed only after all commercial diving employees have fully complied with the reporting requirements of 46 CFR part 4 and this section;

(2) Analyze the event and take all reasonable action required to prevent further events from occurring;

(3) Arrange for a timely post-casualty audit to be conducted in accordance with 46 CFR 197.211;

(4)(i) Ensure that any equipment that may have contributed to the event is immediately removed from service and secured against unauthorized access and any change in its material condition is recorded;

(ii) Ensure that any repair to the equipment described in paragraph (a)(4)(i) of this section and any deviation from the requirements of paragraph (a)(4)(i) are reported to the local Officer in Charge, Marine Inspection (OCMI) as soon as possible;

(iii) Ensure that any equipment described in paragraph (a)(4)(i) of this section and any documentation relating to the event is retained, made available to the OCMI upon request, and not disposed of until the OCMI gives written permission; and

(5) Ensure that the commercial diving operation and all commercial diving employees comply with any conditions imposed by the OCMI to protect life, property, or the environment.

(b) In addition to the reporting requirements of 46 CFR subpart 4.05 and 33 CFR 146.30 and 150.815, the person in charge (PIC) must notify the OCMI as soon as possible after a diving casualty occurs if the casualty involves loss of life or a diving-related injury that causes incapacitation for more than 72 hours or hospitalization for more than 24 hours.

(c) The notice required in paragraph (b) of this section must contain the—

(1) Name and official number (if applicable) of the vessel or facility;

(2) Name of the owner or operator of the vessel or facility;

(3) Name of the PIC;

(4) Name of the dive supervisor;

(5) Description of the casualty including presumed cause;

(6) Maximum depth and exposure time; and

(7) Nature and extent of the injury.

(d)(1) In addition to the notice required in paragraph (b) of this section, the PIC must provide a written report in accordance with 46 CFR subpart 4.05 within 5 days of the casualty.

(2) When the marine casualty or serious marine incident occurs on a vessel's diving installation, the report must be submitted on Form CG2692. When the marine casualty or serious marine incident occurs on a facility's diving installation, the report can be in narrative written form if it contains the information required in paragraph (c) of this section and the information required to be submitted on Form CG2692.

(3) The report must be accompanied by a copy of the dive supervisor investigation report required in 46 CFR 197.222(n) when decompression sickness is involved.

(4) The report must include information relating to alcohol or drug involvement as required in 46 CFR 4.05–12.

(e) Each dive supervisor must promptly notify the PIC of any diving-related casualty, accident, or injury.

(f) The owner, agent, or PIC of a vessel or facility for which a report of casualty is made under paragraph (d) of this section must retain all records onboard that are maintained on the vessel or facility and those records required by this subpart, including all logbooks and reports, for 6 months after the report of a casualty is made or until advised by the OCMI that records need not be retained onboard, and must make them available for examination by any Coast Guard official or approved third-party organization authorized to investigate the casualty.

(g) Each CDO and owner of a vessel or facility that determines that a casualty or incident is, or is likely to become, a serious marine incident, must comply with the applicable chemical testing and reporting requirements outlined in 46 CFR subpart 4.06.

§ 197.225 Safety management system.

(a) Each commercial diving operator, and each vessel or facility owner that permits a commercial diving operation to take place on board or at the facility, must conduct the internal and external audits required by 46 CFR 197.210 and 197.211 and must conduct operations in accordance with a safety management system meeting the requirements of ISO 9001–2008, or equivalent standard recognized by the Office of Design and Engineering Standards, Commandant (CG–ENG).

(b) Each vessel engaged on an international voyage and subject to the International Convention for the Safety of Life at Sea must be operated in accordance with a Safety Management System meeting the requirements of the International Safety Management Code.

§§ 197.226–197.239 [Reserved]

Personnel Training and Qualifications

197.240 General requirements.

(a) Each commercial diving employee employed in a commercial diving operation must have the knowledge, skills, experience, training, and certification necessary to perform the duties to which he or she is assigned and must meet the requirements of the role to which he or she is assigned as outlined in section 3 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202), except insofar as it has been modified by this subpart.

(b) Each commercial diving team member must be trained in and maintain valid certification for cardiopulmonary resuscitation (CPR) and first aid (American Red Cross standard course or equivalent).

§ 197.241 Standby divers.

(a) No standby diver may perform any other duty that might interfere with his or her duties as a standby diver while another diver is in the water.

(b) Each standby diver must—

(1) Be fully dressed and able to enter the water in less than 1 minute and when directed to do so by the dive supervisor;

(2) Stay in the immediate location of the dive and dive support equipment while a diver is in the water; and

(3) Stay aware of events and conditions relevant to the dive.

§ 197.242 Dive supervisors.

(a) Except insofar as it has been modified by this subpart, each dive supervisor of a commercial diving operation must meet the requirements for the specific mode of diving being supervised, as outlined in section 3 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202).

(b)(1) A surface-supplied air dive supervisor must meet the requirements of a surface-supplied air diver, and complete at least 150 dives serving as a qualified surface-supplied air diver.

(2) A mixed-gas dive supervisor must meet the requirements of a mixed-gas diver and—

(i) Complete at least 150 mixed-gas dives as a qualified mixed-gas diver; and

(ii) Complete at least 150 dives as a surface-supplied air diving supervisor.

(3) A saturation dive supervisor must meet the requirements of a saturation diver, and—

(i) Complete at least 150 dives as a saturation diver; and

(ii) Complete at least 150 dives as a mixed-gas diving supervisor.

§ 197.243 Divers and dive tenders.

(a) Except insofar as it has been modified by this subpart, each diver and dive tender for a commercial diving operation must meet the commercial diving training requirements of section 2.2 and the diving personnel responsibilities, qualifications and certification requirements of section 3 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202).

(b) In lieu of the requirements in section 3.5.3(a) and (b) of the ADCI Standards (incorporated by reference, see 46 CFR 197.202), a mixed-gas diver must complete at least 100 dives as an air diver; and complete at least 50 dives as tender to a mixed-gas diver.

(c) In lieu of the requirements in section 3.7.3(a) and (b) of the ADCI Standards (incorporated by reference, see 46 CFR 197.202), a saturation diver must complete at least 200 dives as an air or mixed-gas diver; and complete at least 100 dives as a mixed-gas diver.

(d) A commercial diver or dive tender conducting diving operations prior to (30 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE) and having more than 5 years of commercial diving experience is exempt from having to meet the formal training requirements specified in section 2.2.1 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202).

(e) A commercial diver or dive tender conducting diving operations prior to (30 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE) and having less than 5 years of commercial diving experience must meet the formal training requirements specified in

section 2.2.1 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202) not later than 3 years after (30 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE).

§ 197.244 Life-support technicians.

Each life-support technician for a commercial diving operation must meet the requirements of section 3.9 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202).

§ 197.245 Saturation technicians.

Each saturation technician for a commercial diving operation must meet the requirements of section 3.10 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202).

§ 197.246 Individuals conducting underwater burning, welding, or exothermic cutting.

Each individual conducting underwater burning, welding, or exothermic cutting must provide the commercial diving operator and dive supervisor with documentation showing successful completion of a course for underwater welding, burning, and cutting containing curriculum based on ANSI/ACDE–01–2009 (incorporated by reference, see 46 CFR 197.202) and successful completion of a written and practical exam based on ANSI/ISO 15618 (incorporated by reference, see 46 CFR 197.202).

§ 197.247 Diver medical technicians.

Each individual acting as a diver medical technician must meet the requirements for commercial divers outlined in 46 CFR 197.243(a), be trained as an emergency medical technician according to the National Association of Emergency Medical Technicians, and be trained as a certified medical technician according to the National Board of Diving and Hyperbaric Medical Technology.

§§ 197.248–197.249 [Reserved]

Health and Medical Requirements

§ 197.250 Medical examinations.

(a) Except insofar as it has been modified by this subpart, each commercial diving employee subjected to hyperbaric conditions must comply with section 2.3 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202).

(b) Each commercial diving employee subjected to hyperbaric conditions must—

(1) Be physically and mentally able to safely wear and operate any required equipment, tools, and safety gear necessary to accomplish diving operations or otherwise be exposed to hyperbaric activities without undue danger to themselves or others;

(2) At the time of hire, and at least once every 12 months thereafter, undergo a medical examination by a licensed physician to determine the employee's physical and cognitive ability to meet the standard described in paragraph (b)(1) of this section, and must ensure that he or she provides the commercial diving operator and the dive supervisor with a written medical report from his or her attending physician that includes the—

(i) Date of the examination;

(ii) Physician's name, business address, and telephone number; and

(iii) Physician's medical determination of fitness for diving or otherwise being subjected to hyperbaric conditions, and any restrictions or limitations that would apply to work activities.

§ 197.251 Pre-operational verification.

(a) Before each commercial diving operation, the commercial diving operator (CDO) and the dive supervisor must ensure that each person who may be subjected to hyperbaric conditions has complied with 46 CFR 197.250.

(b) No CDO or dive supervisor may knowingly—

(1) Expose an employee to hyperbaric conditions if the employee has not complied with the requirements of this subpart; or

(2) Use the employee in a manner that is not consistent with any restrictions or limitations listed by a physician under 46 CFR 197.250(b)(2)(iii).

(c) Each CDO and dive supervisor must ensure that no dive team member is under the influence of alcohol, a dangerous drug, or a legal prescription or non-prescription medication whose use is inadvisable by a medical physician while performing the duty to which the person is assigned.

§ 197.252 Work hours.

Each commercial dive operator and dive supervisor must ensure that each dive member is provided the opportunity to obtain at least 12 hours of rest within any 24-hour period, except in an emergency or drills that may be required in accordance with 46 CFR 15.710(d).

§ 197.253 Ascent to altitude after diving or flying after diving.

Commercial divers leaving a dive site and traveling over mountains or departing by air must comply with Chapter 9–14 of the U.S. Navy Diving Manual (incorporated by reference, see 46 CFR 197.202).

§§ 197.254–197.259 [Reserved]

Specific Operations

§ 197.260 Operations with potential for differential pressures in adjacent areas.

Each commercial diving operator performing a commercial diving operation that has the potential for developing differential pressures in adjacent areas must comply with section 5.17 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202), and ensure that the recommendations outlined in section 5.17.3 of the ADCI Standards are implemented.

§ 197.261 Operations conducted from a dynamic positioning vessel.

(a) Each commercial diving operator (CDO) performing commercial diving operations from a vessel using a dynamic positioning (DP) system must comply with section 8.3 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202).

(b) Each CDO to whom this section applies must—

(1) Ensure that the DP system for the vessel is periodically inspected, tested, and maintained in accordance with the applicable manufacturer and/or classification society requirements for the specific DP system used;

(2) Ensure that periodic inspections, tests, and maintenance for the DP system on the vessel are recorded in the logbook required by 46 CFR 197.221(c)(10); and

(3) Ensure that the onboard dive location is not located within 5 meters of a propulsion source.

§ 197.262 Operations conducted from a vessel that is liveboating.

Each commercial diving operator performing commercial diving operations from a vessel that is liveboating must comply with section 8.2 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202) and must notify the person in charge before a diver enters or exits the water.

§ 197.263 Operations involving SCUBA.

Each commercial diving operator performing commercial diving operations involving the use of a self-contained underwater breathing apparatus must comply with section 4.2 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202), and must ensure that a boat is available for diver pickup when a diver is not line-tended from the dive location.

§ 197.264 Operations involving multiple dives by a diver.

Each commercial diving operator requiring divers to engage in multiple

dives must first make sure that equivalent air depth calculations are determined by the dive supervisor and the diver, and that those calculations are entered into the Standard Navy Air Tables contained in the U.S. Navy Dive Manual (incorporated by reference, see 46 CFR 197.202) to determine the subsequent dive profile.

§ 197.265 Operations in which a diver's decompression is required, but has been omitted.

Commercial diving operators must ensure that the procedures identified in the U.S. Navy Diving Manual, Sixth Edition (incorporated by reference, see 46 CFR 197.202) are followed when a diver's decompression is required but has been omitted.

§ 197.266 Operations in contaminated water.

Commercial diving operations conducted in contaminated water must comply with section 5.38 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202).

§ 197.267 Operations involving underwater welding and burning.

Commercial diving operations involving underwater welding and burning must comply with section 5.31 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202).

§§ 197.268–197.269 [Reserved]

Equipment

§ 197.270 General requirements.

(a) Each diving installation used on each vessel or facility subject to this subpart must comply with this subpart.

(b) In addition to the requirements of this subpart, equipment that is permanently installed on vessels and is part of the diving installation must comply with subchapters F and J of this chapter or other equivalent standards acceptable to the Office of Design and Engineering Standards, Commandant (CG–ENG).

(c) All equipment used to support a commercial diving operation, including, but not limited to, breathing gas hoses, umbilicals, compressor systems, volume tanks, compressed-gas cylinders, pressure vessels for human occupancy, diving ladders and stages, launch and recovery systems, entry and egress systems, emergency evacuation systems, helmets, masks, harnesses, gauges, timekeeping devices, and diver's dress must meet the applicable equipment requirements outlined in the ADCI Standards (incorporated by reference, see 46 CFR 197.202), in addition to the requirements of this subpart.

(d) A modular or packaged commercial diving unit placed aboard a vessel for use in a commercial diving operation must have documentation indicating that the unit and its installation have been reviewed and approved for its intended use by a recognized classification society that meets the requirements of 46 CFR part 8, or by another organization acceptable to the Office of Design and Engineering Standards, Commandant (CG–ENG).

(e) Where a hyperbaric lifeboat is provided as an emergency evacuation system it must—

(1) Be used for no other purpose;

(2) Not be counted to meet applicable carriage requirements for survival craft;

(3) Meet the hyperbaric evacuation system requirements of IMO Resolution A.692(17) (incorporated by reference, see 46 CFR 197.202); and

(4) Be type-approved by a recognized classification society as defined in 46 CFR 8.100, or issued a Coast Guard approval certificate under approval series 160.135.

§ 197.271 Commercial diving operator's general equipment duties.

(a) Each commercial diving operator (CDO) must ensure all commercial diving employees comply with this subpart and document compliance with paragraphs (b) through (e) of this section in an equipment maintenance logbook.

(b) The CDO must maintain, inspect, test, and use all equipment in accordance with the manufacturer's recommendations.

(c) The CDO must inspect, maintain, and repair all equipment in accordance with a documented maintenance system that designates the person or persons authorized to perform inspection and maintenance and that includes the following for each item of equipment—

(1) A permanently marked (by the manufacturer or equipment owner) unique identification number; except that no number is required for consumable supplies;

(2) A description and timeframes for periodic tests and maintenance, whether regularly scheduled or to be performed after repair or modification;

(3) Cable and lifting component certificates; and

(4) Manufacturer service life specifications, including the equipment's date of entry into dive service and recommended date of removal from service.

(d) The CDO must ensure that all equipment used for commercial diving operations is repaired or modified in accordance with manufacturer's recommendations by technicians certified by the manufacturer to make repairs or modifications.

(e) The CDO must ensure that any non-conforming equipment is physically destroyed, stored, displayed, or otherwise removed from service to prevent its use and marked or tagged to indicate why it was removed and whether the removal is temporary or permanent.

197.272 Person in charge's equipment duties.

Each person in charge (PIC) of a facility or a vessel providing equipment or support systems identified in this subpart and used by the commercial diving operator must document compliance with the manufacturer's equipment maintenance requirements in an equipment maintenance logbook. The PIC must keep the logbook for at least 5 years and make it available for inspection by the dive supervisor at the dive location.

197.273 Dive supervisor's equipment maintenance logbook duties.

Each dive supervisor must keep the equipment maintenance logbook required by 46 CFR 197.272 and make it available for inspection at the dive location.

197.274 Diver's equipment duties.

Each diver using personal dive equipment must maintain, inspect, and use the equipment in accordance with the manufacturer's specifications and this subpart. Before using personal equipment, the diver must provide the person in charge and the dive supervisor with documentation showing compliance with this requirement.

§ 197.275 Volume tanks.

(a) Each commercial diving operator (CDO) must ensure that each volume tank used in a diving system for a commercial diving operation complies with section 6.11.1 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202).

(b) Each CDO must ensure that each volume tank—

(1) Is equipped with intakes located away from areas containing internal combustion engine exhaust fumes or other hazardous contaminants; and

(2) Has an efficient filtration system if the tank is in a compressor used to supply breathing air to a diver.

§ 197.276 Compressed gas cylinders.

Each commercial diving operator must ensure that each compressed gas cylinder—

(a) Complies with section 6.11.2 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202);

(b) Complies with the applicable requirements of 49 CFR part 173,

subpart G; 46 CFR part 178, subpart C; and 46 CFR part 180, subpart C; and

(c) Is tested after any repair, modification, or alteration to the pressure boundaries.

§ 197.277 Pressure vessels for human occupancy.

(a) Each commercial dive operator must ensure that each pressure vessel for human occupancy (PVHO) complies with section 6.12 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202); is designed, constructed, tested, and maintained (including any pressure relief device and associated systems) in accordance with ASME PVHO–1 (incorporated by reference, see 46 CFR 197.202); or complies with the design and classification requirements of a classification society recognized in accordance with 46 CFR part 8; and complies with paragraphs (b) through (g) of this section.

(b) Each PVHO must—

(1) Have a check valve located on the outside of the PVHO within 1 foot of the pressure boundary on all piping exclusively carrying fluids into the PVHO;

(2) Have a pressure gauge 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;

(3) Have a protective device on the inlet side of PVHO exhaust lines; and

(4) Have a means of overriding and controlling from the exterior all interior breathing and pressure supply controls.

(c) Each closed bell must meet the requirements of this section and have lifting equipment attached to the closed bell capable of returning the occupied closed bell when fully flooded to the dive location.

(d) Each closed bell must have a life support capability for the intact closed bell and its occupants for:

(1) 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

(2) 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 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 this paragraph (d).

(e) Each closed bell must be capable of attachment to another PVHO that allows the transfer of personnel and diver's equipment under pressure from the closed bell to a PVHO that—

(1) Meets the requirements of this section;

(2) Is capable of attachment to a decompression chamber meeting the requirements of this section; and

(3) Allows the transfer of personnel and diver's equipment under pressure from the PVHO to the decompression chamber.

(f) Each open bell must meet the requirements of section 6.8.2 of the ADCI Standards or other equivalent standard accepted by the Office of Design and Engineering Standards, Commandant (CG–ENG).

§ 197.278 Pressure piping.

Each piping system that is not an integral part of the vessel or facility, but is carrying fluids under pressures exceeding 15 pounds per square inch gauge, must be designed, maintained, and repaired in accordance with ASME B31.1 (incorporated by reference, see 46 CFR 197.202) or other equivalent standard accepted by the Office of Design and Engineering Standards, Commandant (CG–ENG), and must have the point of connection to the integral piping system of the vessel or facility clearly marked.

§ 197.279 First aid and treatment equipment.

(a) First aid and treatment equipment used at a commercial diving operation must comply with sections 5.4 and 5.20 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202) or other equivalent standard accepted by the Office of Operating and Environmental Standards, Commandant (CG–OES) and must comply with this subpart.

(b) The location of each commercial diving operation must have—

(1) A medical kit approved by a physician that includes 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 or equivalent; and

(3) The capability to remove an injured diver from the water.

(c) Each commercial diving operation must have a two-way communications system to obtain emergency assistance, except when the vessel or facility ship-to-shore, two-way communications system is readily available.

(d) Each dive location supporting mixed-gas dives, dives deeper than 100 feet of sea water, or dives outside the no-decompression limits must meet the requirements of paragraph (b) of this section and have—

(1) A decompression chamber that complies with 46 CFR 197.277;

(2) Decompression tables;

(3) A supply of breathing gasses sufficient to treat for decompression sickness;

(4) A medical kit as required by paragraph (b)(1) of this section that can be carried into the decompression chamber and that is suitable for use under hyperbaric conditions; and

(5) The capability to assist an injured diver into the decompression chamber.

§ 197.280 Diving ladders and stages.

(a) Each diving ladder and stage must meet the requirements of section 6.8 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202) or other equivalent standard accepted by the Office of Operating and Environmental Standards, Commandant (CG–OES) and must comply with this subpart.

(b) Each diving ladder must be firmly in place and available at the dive location for a diver to enter or exit the water unless a diving stage or bell is provided.

(c) Each diving stage must have an open-grating platform and must be available for a diver to enter or exit the water from the dive location and must be available for in-water decompression if the diver is—

(1) Wearing a heavyweight diving outfit; or

(2) Diving outside the no-decompression limits, except when a bell is provided.

§ 197.281 Surface-supplied helmets and masks.

(a) Each surface-supplied helmet or mask must meet the requirements of section 6.4 of the ADCI Standards (incorporated by reference, see 46 CFR 197.202) or other equivalent standard accepted by the Office of Operating and Environmental Standards, Commandant (CG–OES) and must comply with this subpart.

(b) Each surface-supplied air helmet or mask must—

(1) Ventilate at least 4.5 atmospheric cubic feet per minute at any depth at which it is operated; or

(2) Be able to maintain the diver's inspired carbon dioxide partial pressure below 0.02 atmospheres absolute when the diver is producing carbon dioxide at the rate of 1.6 standard liters per minute; and

(3) Have an exhaust valve.

§ 197.282 Diver's safety harness.

Each safety harness used in surface-supplied diving must meet the requirements of section 6.3.4 of the ADCI Standards (incorporated by

reference, see 46 CFR 197.202) or other equivalent standard accepted by the Office of Operating and Environmental Standards, Commandant (CG–OES), and it must have an attachment point for the umbilical life line that distributes the pulling force of the umbilical over the diver's body and prevents strain on the mask or helmet.

§ 197.283 Buoyancy-changing devices.

(a) A dry suit or other buoyancy-changing device not directly connected to the exhaust valve of the helmet or mask must have an independent exhaust valve.

(b) When used for SCUBA diving, a buoyancy-changing device must have an inflation source separate from the breathing gas supply.

§ 197.284 Inflatable flotation devices.

An inflatable flotation device for SCUBA diving must—

(a) Be capable of maintaining the diver at the surface in a face-up position;

(b) Have a manually activated inflation device;

(c) Have an oral inflation device;

(d) Have an over-pressure relief device; and

(e) Have a manually operated exhaust valve.

§ 197.285 Oxygen safety.

(a) Equipment used with oxygen or oxygen mixtures greater than 40 percent by volume must be designed for that use.

(b) Oxygen systems with pressures greater than 125 pounds per square inch gauge must have slow-opening shut-off valves; except that pressure boundary shut-off valves may be ball valves.

(c) The dive supervisor must ensure that equipment used with oxygen or oxygen mixtures greater than 40 percent by volume is cleaned of flammable materials, both before being placed into service, and after any repair, alteration, modification, or suspected contamination.

§ 197.286 Miscellaneous equipment requirements.

Each commercial diving operator must ensure that the commercial diving operation equipment listed in table 197.286 of this section complies with the requirements shown in that table.

TABLE 197.286—MISCELLANEOUS EQUIPMENT REQUIREMENTS

Equipment	Requirement
Breathing gas supply, diver-carried reserve.	Must be sufficient to allow diver to reach surface, or another source of breathing gas if primary supply fails, or be reached by a standby diver equipped with another source of breathing gas for the diver. Unused ports must be capped off to prevent unintended loss of watertight integrity.
Breathing gas supply, primary	Must be sufficient to support the diver, the standby diver, and the open or closed bell when provided, for duration of planned dive; and sufficient to supply the decompression chamber, for duration of the dive, or the treatment of an injured diver plus 1 hour after dive's completion. Unused ports must be capped off to prevent unintended loss of watertight integrity.
Breathing gas supply, secondary ...	Must be sufficient to support the diver while returning to the surface, the diver during decompression, the standby diver, the open or closed bell when returning the diver to surface, and the decompression chamber for duration of dive plus 1 hour after dive's completion. Unused ports must be capped off to prevent unintended loss of watertight integrity.
Oxygen	Oxygen used for breathing mixtures must meet the requirements of Federal Specification BB–O–925a, (incorporated by reference, see 46 CFR 197.202), and be type 1 (gaseous) grade A or B.
Nitrogen	Nitrogen used for breathing mixtures must meet the requirements of Federal Specification BB–N–411c, (incorporated by reference, see 46 CFR 197.202), be type 1 (gaseous); class 1 (oil free); and grade A, B, or C.
Helium	Helium used for breathing mixtures must be grades A, B, or C produced by the Federal government, or equivalent.
Compressed air	Compressed air used for breathing mixtures must meet the standards of the Compressed Gas Association Publications G–7 and G–7.1 (incorporated by reference, see 46 CFR 197.202).
Diving system power	Must minimize risk of injury, fire, explosion, or exposure of personnel to emissions or negative interaction with other equipment. Provide independent backup supply that, if the primary supply is disabled, will not interfere with the power requirements of the vessel or facility that supplies the backup, is ready for immediate use, and is sufficient to support safe termination of diving.
Equipment to which a manufacturer's service life specification applies.	The date the equipment entered into service, underwent repairs, and the date the service life expires must be entered into the equipment logbook.
Equipment used with oxygen mixture greater than 23.5 percent by volume.	Must be marked ''FOR OXYGEN USE ONLY'' and cleaned in accordance with Compressed Gas Association Publication G–4.1 (incorporated by reference, see 46 CFR 197.202).
Gauges and timekeeping devices ..	A diver depth gauge (if the dive is surface supplied) and timekeeping device must be at each dive location. All gauges and timepieces must be calibrated according to manufacturer's specifications. Devices for monitoring diver exposure time under pressure must be easily readable.
Oxygen system, pressure greater than 125 psi(g).	Slow-opening shut-off valves must be provided, except for pressure boundary shut-off valves, which may be ball valves.
Pressure piping repairs	Must be in accordance with ASME B31.1 (incorporated by reference, see 46 CFR 197.202) or 46 CFR part 56, as applicable.
Pressure vessel repairs	Must be in accordance with ASME NBBPVI, ASME PVHO–1, (incorporated by reference, see 46 CFR 197.202), 46 CFR part 54, or 49 CFR part 180 subpart C, as applicable.

Dive Team Staffing

§ 197.290 Dive team staffing requirements.

(a) Each commercial diving operator and dive supervisor must ensure that each diving operation is conducted with enough personnel to keep all personnel safe, to offset anticipated risks, and to properly perform the work. Diving operations lasting less than 12 hours, unless otherwise specified, must meet the minimum dive team requirements set forth in table 197.290 of this section.

TABLE 197.290—MINIMUM DIVE TEAM STAFFING SIZE AND COMPOSITION

Operation	Minimum dive team size	Minimum dive team composition
Saturation diving *	14 **	2 Dive supervisors, 2 Divers, 2 Standby divers (see note 1), 4 Dive tenders, Life-support technician supervisor, Life-support technician, Saturation system technician supervisor, Saturation system technician.
SCUBA	4	Dive supervisor, Diver, Tender (see note 2), Standby diver (see note 1).
Surface-supplied air diving	5	Dive supervisor, Diver, Tender (see note 2), Standby diver (see note 1), Standby diver tender (see note 3).
Surface-supplied diving, mixed-gas	5	Dive supervisor, Diver, Tender (see note 2), Standby diver (see note 1), Standby diver tender (see note 3).

Notes:
1. A standby diver must be fully dressed and either staged in the water as a safety diver, or capable of entering the water within 1 minute, at the dive supervisor's direction, to support a diver in distress.
2. The tender's only duty is to support the working diver to which assigned.
3. A standby diver tender may perform other duties directly supporting the dive in progress, except when the tender's standby diver is deployed.
* Staffing standards reflects operations exceeding 12-hour work cycles.
** With the exception of the supervisors and technicians, one member of the team shall be a diver medical technician.

(b) Dive supervisors must ensure that the minimum dive team requirements shown in table 197.290 are met based on one dive and any applicable decompression time required. When necessary, dive supervisors may increase manning levels and may require additional equipment for any diving in excess of one dive and any applicable decompression time required.

(c) Commercial dive operators and dive supervisors must ensure that proper pre-job planning is conducted in accordance with 46 CFR 197.220(i) to ensure that the necessary levels of personnel and equipment are available for all commercial diving operations.

(d) Mixed gas commercial diving operations must include a life support technician dedicated for the purpose of operating the mixed gas system.

§§ 197.303–197.309 [Reserved]

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J.G. Lantz,

Director of Commercial Regulations and Standards, United States Coast Guard.

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