ADVANCING TECHNOLOGY AND REASONABLE REGULATIONS: COAST GUARD RULES ON COMMERCIAL DIVING OPERATIONS

Commander David Zawadzki
Lieutenant Timothy C. Healey

United States Coast Guard
Washington, D.C. 20593

Abstract

The Coast Guard rules governing certain commercial diving operations were published in 1978. Advances brought about by marketplace competition as well as research and development require flexibility and common sense when writing and implementing safety regulations. Deeper working dives, extended bottom times, increased use of manned submersibles, the advent of one-atmosphere suits and other changes all place burdens on an agency's ability to perform their legislated tasks in a professional manner. As a partner in the progress of ocean development, some of our general policies and how we have reacted to this in our diving rules will be discussed, noting specific examples.

As the result of regulation and rulemaking activities that started in 1975, the United States Coast Guard published final rules for Commercial Diving Operations in the Federal Register of 16 November 1978 (43 FR 222, pages 53678-53692). Due to the complex technical considerations and the overwhelming operational diversity within the commercial diving industry, the challenge in meeting the legislated responsibilities for safety regulations, while not being excessively burdensome, was (and remains) formidable. The following are a few examples which show how this challenge was met.

First, an example of how a conscious decision was made not to regulate a specific area. In the decision-making process within the Coast Guard, and as reflected in the Preamble to the Final Rule, it was decided not to develop regulations regarding the qualifications of dive team members at that time. Factors that were evaluated in making the decision not to establish regulations for divers and dive team members included: the existence and use of commercial diver training institutions; the industry's use of physicians trained and experienced in hyperbaric medicine employed by companies and schools; the continued development and implementation of on-the-job training programs; and the publishing of and reported adherence to consensus standards developed by the majority of the U.S. commercial diving companies through their Association of Diving Contractors. Even though the Coast Guard has not issued rules in this area, dive team qualifications remain a topic of concern. Any possible future rulemaking action would be precipitated by identifiable need and adequate justification. Identifiable need could be shown by identification of a problem area subsequent to Coast Guard investigations of diving casualties/incidents and failure of the diving industry to take adequate corrective action on its own.

Next, I will give an example of where regulations outlining specific requirements were felt to be needed. In some areas, we found it most efficient and effective to specify certain requirements, particularly with equipment. The availability of a decompression chamber at the dive location for dives deeper than 130 feet salt water (fsw) or outside the no-decompression limits is one example. Another example is the prohibition of SCUBA diving in the following instances: outside the no-decompression limits; at depths deeper than 130 fsw; against currents greater than one (01) knot unless the diver is line-tended; or if the diver cannot directly ascend to the surface unless line-tended.

While this philosophy of specific requirements was necessary in some areas, in other instances well-known existing standards were referenced. Examples of this method includes adoption of the ASME PVHO-1 code for chambers and bells, federal specifications for some breathing gases, and the ANSI Code for pressure piping repairs and modifications. Utilizing reasonable and well-known existing standards issued by credible independent organizations has many advantages. One of these advantages is to minimize the impact of our rules by utilizing standards already familiar to many in the affected industry. An additional benefit of utilizing rules from organizations such as ASME and ANSI is that their committee-type composition allows for substantial input from all of the concerned parties - manufacturers, contractors, labor and government.
Perhaps the most significant posture taken by the Coast Guard in developing the commercial diving rules is the use of a performance-oriented standard. That is, a rule purposely developed to state the desired end result but not specifying a single path to attain it. The requirements for safety in liveboating provide a very good example of this where the rule states only that "A means is used to prevent the diver's hose from entangling in the propellers of the vessel." A propeller guard is not specified, although at first glance that may appear to be the (obvious) answer. Other methods are permissible, as long as the end result of keeping the hose out of the propeller is achieved.

Taken to the extreme, it could be suggested that we could have merely required a performance standard stating that no one be injured or killed while conducting a commercial diving operation within Coast Guard jurisdiction. That, however, lacks the specificity required by all concerned parties to accomplish effective compliance and to provide for needed enforcement. Enforcement capability is as important an aspect for the issuing agency as it is for the diver. To this end, consider that our rules in their specificity do accomplish a preventative function as well as the more publicized fault-finding during the investigation following a casualty. While it would certainly be highly desirable to prevent the recurrence of dives resulting in casualties, it is not always possible to completely eliminate all risk, unless we completely remove humans from exposure to the hazard. However, I do want to emphasize that I believe it is government's and, I might add, the diving industry's responsibility to help to insure as safe a working environment for the diver as is reasonably and technologically possible.

In conclusion, I believe that comments received during the public rulemaking process and in other public forums since 1979 indicate that the Coast Guard must be on a reasonable track toward commercial diving safety. Spokesmen from diving contractors in many instances have stated that we have gone too far, that our rules are restrictive operationally, and that development of new technologies is hindered. On the other hand, others state we have not done enough. To me, walking this tightrope, while not always comfortable, is another indication that we have taken an important first step toward improving diver safety while not stifling the development of technologies and procedures needed to enhance that safety.

NOTE: "The views expressed herein are those of the authors and do not necessarily represent the official views of the Department of Transportation or the U.S. Coast Guard."