are held by low- and moderate-income individuals; and

(3) Investments in low- and moderate-income areas that produce or retain permanent jobs, the majority of which are held by low- and moderate-income individuals;

(c) Investments in community development entities, including:

(1) Investments in a national bank that has been approved by the OCC as a national bank with a community development focus;

(2) Investments in a community development financial institution, as defined in 12 U.S.C. 4742(5);

(3) Investments in a community development entity that is eligible to receive New Markets tax credits under 26 U.S.C. 45D; and

(d) Other public welfare investments, including:

(1) Investments that provide credit counseling, job training, community development research, and similar technical assistance services for non-profit community development organizations, low- and moderate-income individuals or areas, or small businesses located in low- and moderate-income areas or that produce or retain permanent jobs, the majority of which are held by low- and moderate-income individuals;

(2) Investments of a type approved by the Federal Reserve Board under 12 CFR 208.22 for state member banks that are consistent with the requirements of § 24.3; and

(3) Investments of a type previously determined by the OCC to be permissible under this part.

Dated: December 23, 2002.

John D. Hawke, Jr.,

Comptroller of the Currency.

[FR Doc. 03–362 Filed 1–9–03; 8:45 am]

BILLING CODE 4810–33–P

DEPARTMENT OF LABOR

Occupational Safety and Health Administration

29 CFR Part 1910

[Docket No. S–550]

RIN 1218–AB97

Commercial Diving Operations

AGENCY: Occupational Safety and Health Administration (OSHA), Department of Labor.

ACTION: Proposed rule; request for comments and scheduling of informal public hearings.

SUMMARY: OSHA is proposing to amend its Commercial Diving Operations standards to allow employers of recreational diving instructors and diving guides to use an alternative to the decompression-chamber requirements for post-dive procedures and mixed-gas diving. The proposed alternative would apply only when these employees are engaging in recreational diving instruction and diving guide duties using an open-circuit, a semi-closed-circuit, or a closed-circuit self-contained underwater breathing apparatus supplied with a breathing gas consisting of a high percentage of oxygen mixed with nitrogen.

DATES: Submit written hearing requests and comments regarding this proposal, including comments on the information-collection determination described in Section V of the preamble (''Paperwork Reduction Act),'' by the following dates:

Hard copy. Submitted (postmarked or sent) by April 10, 2003.

Facsimile and electronic transmission. Sent by April 10, 2003.

Please see the section entitled ''Supplementary Information'' below for additional information on submitting written comments and hearing requests.

ADDRESSES: *Comments and Attachments: Regular mail, express delivery, hand-delivery, and messenger service.* Submit three copies of written comments and attachments to the OSHA Docket Office, Docket No. S–550, Technical Data Center, Room N–2625, U.S. Department of Labor, 200 Constitution Ave., NW., Washington, DC 20210; telephone (202) 693–2350. OSHA Docket Office and Department of Labor hours of operation are 8:15 a.m. to 4:45 p.m., EST.

Please note that security-related problems may result in significant delays in receiving comments and other written materials by regular mail. Telephone the OSHA Docket Office at (202) 693–2350 for information regarding security procedures concerning delivery of materials by express delivery, hand delivery, and messenger service.

Facsimile. Transmit written comments (including attachments) consisting of 10 or fewer pages by facsimile to the OSHA Docket Office at (202) 693–1648. You must include the docket number of this notice, Docket No. S–550, in your comments.

Electronic. Submit comments electronically through the Internet at *http://ecomments.osha.gov.* Please note that you cannot attach materials such as studies or journal articles to electronic comments. If you have such materials, you must submit three copies of them to the OSHA Docket Office at the address above. These materials must clearly identify your electronic comments by name, date, subject, and docket number so we can attach them to your comments.

All comments and submissions will be available for inspection and copying in the OSHA Docket Office at the address above. Comments and submissions posted on OSHA's Web page will be available at *http://www.osha.gov.* Contact the OSHA Docket Office at (202) 693–2350 for information about materials not available on the OSHA Web page and for assistance in using this Web page to locate docket submissions. Because comments sent to the docket or to OSHA's Web page are available for public inspection, the Agency cautions interested parties against including in these comments personal information such as social security numbers and birth dates.

Hearing Requests: Send hearing requests in quadruplicate to Ms.Veneta E. Chatmon, Office of Public Affairs, Docket No. S–550, Room N–3649, OSHA, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington, DC 20210; telephone (202) 693–1999. Interested parties may transmit these requests by facsimile to Ms. Chatmon at (202) 693–1634.

FOR FURTHER INFORMATION: For general information and press inquiries, contact Ms. Bonnie Friedman, Office of Information and Consumer Affairs, Room N–3647, OSHA, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington, DC 20210; telephone (202) 693–1999. For technical inquiries, contact Ms. Joanne Slattery, Directorate of Standards and Guidance, Room N–3609, OSHA, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington, DC 20210; telephone (202) 693–2056 or fax (202) 693–1663. Copies of this **Federal Register** notice are available from the OSHA Office of Publications, Room N–3101, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington DC 20210; telephone (202) 693–1888. For an electronic copy of this notice, go to OSHA's Web site (*http://www.osha.gov*), and select ''**Federal Register**,'' ''Date of Publication,'' and then ''2002.''

SUPPLEMENTARY INFORMATION:

Table of Contents

The following Table of Contents identifies the major sections under **SUPPLEMENTARY INFORMATION** including the summary and explanation and the regulatory text of the proposed application provisions and alternative.

I. Background

The Agency published a final rule in 1977 regulating the occupational safety and health employees engaged in commercial diving operations under 29 CFR part 1910, subpart T (42 FR 37668). In 1999, acting under Section 6(d) of the Occupational Safety and Health Act of 1970 (''OSH Act''; 29 U.S.C. 655), OSHA published an order granting a permanent variance to Dixie Divers, Inc. (''Dixie'') (Ex. 2–11). The permanent variance exempted Dixie from OSHA's decompression-chamber requirements specified at § 1910.423(b)(2) and (c)(3)(iii), and § 1910.426(b)(1) when its recreational diving instructors and diving guides engage in underwater instructional and guiding operations. The variance applies only to mixed-gas diving operations at a maximum depth of 130 feet of sea water (''fsw'') performed within the no-decompression limits; employees used a breathing-gas mixture consisting of a high percentage of O_2 mixed with nitrogen (*i.e.*, a nitrox breathing-gas mixture) supplied by an open-circuit, semi-closed-circuit or closed-circuit SCUBA. In issuing the permanent variance, the Agency noted that it met or exceeded the level of protection afforded by OSHA's decompression-chamber requirements.

In a letter dated February 4, 2000, Mr. Jeff Nadler, Vice President of the Professional Association of Diving Instructors Americas, requested guidance from OSHA regarding other employers of recreational diving instructors who complied with the conditions of the permanent variance granted to Dixie (Ex. 3–1). The Agency responded to Mr. Nadler on May 3, 2000, stating that it would consider such employers ''to be in de minimis violation of the decompression-chamber requirements specified at paragraphs (b)(2) and (c)(3)(iii) of § 1910.423(b)(2), and paragraph (b)(1) of § 1910.426(b)(1).'' OSHA noted that ''[d]e minimis violations carry no penalties, do not require abatement and no citations are issued.''

While the de minimis policy may provide regulatory relief to some employers, it has several disadvantages. For example, many employers prefer not to invoke the policy because they remain in violation of the applicable standard even though the violation is only ''technical'' and has no enforcement consequences (see OSHA's ''Field Inspection Reference Manual,'' chapter III, paragraph C.2.g. (September 26, 1994)). Additionally, some employers may not know of the policy and, therefore, are unable to benefit from it. Accordingly, the Agency is now proposing to amend its Commercial Diving Operations (''CDO'') standards to incorporate the terms and conditions of the Dixie Divers variance into the standard itself. OSHA believes that the proposed amendment would improve the effectiveness of recreational diving instructors and diving guides by enabling them to remain at the maximum diving depth without developing decompression sickness (''DCS'') or arterial gas embolism (''AGE'') when they return to the surface. By preventing DCS and AGE under these conditions, the proposed amendment would make a decompression chamber near the dive site unnecessary for these divers.

II. Summary and Explanation of the Proposal

OSHA has now had nearly three years of experience with the conditions of the permanent variance granted to Dixie (and with the subsequent application of these conditions by other employers under the de minimis policy). Based on this experience, the Agency believes that diving operations involving recreational instruction and guiding, when performed under the alternative conditions specified in this proposed rule, either meet or exceed the level of employee protection afforded by the diving standard's decompression-chamber requirements. The purpose of having a decompression chamber available and ready for use at the dive site is to treat DCS, which may occur from breathing air or mixed gases at diving depths and durations that require decompression, and AGE, which may result from over-pressurizing the lungs, usually while ascending rapidly to the surface during a dive.

As with the permanent variance granted to Dixie, this proposed rulemaking would impose a number of conditions on employers of recreational diving instructors and diving guides. The following sections describe these conditions, and provide the rationale for including them in this proposal.

A. Proposed §§ 1910.401(a)(3) and 1910.402 (''Definitions'')

Proposed § 1910.401(a)(3) specifies that this regulatory alternative would apply only to recreational diving instructors and diving guides who are engaging solely in recreational diving instruction and dive-guiding operations. In this regard, OSHA is proposing to add definitions of ''recreational diving instruction'' and ''dive-guiding operations'' to § 1910.402 of the CDO standards to clarify the application of the proposed alternative. Accordingly, ''recreational diving instruction'' would mean the training of diving students in the use of recreational diving procedures and the safe operation of diving equipment, including open-circuit, semi-closed-circuit, or closed-circuit SCUBA during dives; additionally, ''dive-guiding operations'' would mean the leading of groups of trained sports divers, who use open-circuit, semi-closed-circuit, or closed-circuit SCUBA, to local undersea diving locations for recreational purposes. In addition, proposed § 1910.401(a)(3) requires that employers ensure that the instructors and guides conduct these dives within the no-decompression limits, and use a nitrox breathing-gas mixture consisting of a high percentage of O_2 (more than 22% by volume) mixed with nitrogen and supplied by an open-circuit, semi-closed-circuit, or closed-circuit self-contained underwater breathing apparatus; employers also must comply with the requirements specified in Appendix C of subpart T.

As noted in the Dixie Diver variance (64 FR 71257), OSHA believes that by limiting application of the proposed alternative as discussed above, recreational diving instructors and diving guides who dive according to the proposed requirements would receive a level of safety and protection equivalent to recreational diving instructors who are exempted from the CDO standards altogether under § 1910.401(a)(2)(i); the recreational diving instructors covered

by § 1910.401(a)(2)(i) must use compressed air supplied to open-circuit SCUBAs under no-decompression diving limits. Therefore, under the proposed alternative, the Agency would not require employers to maintain a decompression chamber at the dive site when they comply with the specified requirements because it believes that compliance with these requirements will reduce the risk of AGE and DCS to the minimal levels already experienced by recreational diving instructors covered by § 1910.401(a)(2)(i).

B. Alternative Conditions of Proposed Appendix C

Proposed Appendix C would be mandatory for any employer who uses the alternative means of compliance for recreational diving instructors and diving guides. The following section sets out the requirements in proposed Appendix C, and provides the rationale for each requirement.

1. Equipment Requirements for Rebreathers

(a) *Manufacturer's instructions.* Proposed Condition 1(a) requires employers to ensure that their recreational diving instructors and diving guides (hereafter, ''divers'') use rebreathers (*i.e.*, semi-closed circuit and closed-circuit SCUBA) according to the rebreather manufacturer's instructions. The manufacturers of these rebreathers select and develop the characteristics and parameters of SCUBA equipment, design and integrate the equipment accordingly, procure or manufacture the equipment components, and then assemble and test the final products. Accordingly, a wide range of SCUBA designs and capabilities are available, and no uniform standards govern the design, function, and use of this equipment. Therefore, OSHA believes that the SCUBA manufacturer is in the best position to identify and specify the components, configuration, and operation of its product, a position that several SCUBA manufacturers endorse (see Ex. 3–4, p. 14–2).

(b) *Counterlungs.* Under the proposed condition, employers must ensure that each rebreather has a counterlung (also referred to as an ''inhalation bag'' or ''breathing bag'') that supplies a sufficient volume of breathing gas to the divers to sustain their respiration rate, and that contains a baffle system that prevents moisture from entering the scrubber or breathing hoses. Counterlungs are low-breathing-resistance reservoirs that supply the nitrox breathing-gas mixture to a diver during inhalation; accordingly, the National Oceanic and Atmospheric Administration (NOAA) considers counterlungs a necessity for rebreather diving (see Ex. 3–12, p. 14–3).

While the proposed condition does not specify a particular counterlung configuration, it would require that the counterlung have a minimum volumetric displacement sufficient to sustain a diver's respiration rate during diving operations. In this regard, OSHA believes that rebreather manufacturers currently provide this information as a usual and customary practice. Accordingly, the proposal would require the employer to ensure that its divers' rebreathers have adequate counterlung volume, and that their divers use the rebreathers according to the manufacturer's instructions. The employer of these divers is in the best position to determine the respiratory requirements associated with their diving operations, and to identify and select a rebreather based on these requirements.

The proposed condition also specifies that a rebreather must contain a baffle system that keeps moisture from entering the scrubber. Accordingly, the proposed baffle system would prevent rapid deterioration of the CO_2-sorbent material housed in the scrubber, thereby decreasing the risk of CO_2 toxicity (see Ex. 3–12, p. 14–8).

(c) *Moisture traps.* Proposed Condition 1(c) requires that the employer use a moisture trap in the breathing loop of each rebreather, and that both the moisture trap and its location in the breathing loop be approved by the rebreather manufacturer. Moisture traps are necessary to keep water out of the CO_2-absorbing canisters; when such water leakage occurs, it can substantially reduce the CO_2-absorbing properties of the sorbent material inside the canister. Evidence from the record of the Dixie Diver variance proceedings (Exs. 3–5, 3–6, and 3–7) indicates that moisture traps are available commercially and that existing rebreathers routinely use them.

(d) *Moisture sensors.* Under proposed Condition 1(d), employers must ensure that each rebreather has a continuously functioning moisture sensor that connects to a visual (*e.g.*, digital, graphic, or analog) or auditory (*e.g.*, voice, pure tone) alarm that warns divers of moisture in the breathing loop in sufficient time to terminate the dive and return safely to the surface. Moisture sensors detect excessive water leakage into the canister that can compromise the CO_2-sorbent material; therefore, they supplement the information provided by CO_2 sensors (see proposed Condition 1(e) below). Therefore, moisture sensors warn divers of hazardous water leakage into the canister, allowing them to return to the surface before CO_2 in the recycled breathing gas reaches dangerous levels. Information submitted in response to the Dixie's variance request (Ex. 3–7) indicates that moisture sensors are commercially available.

Rebreather manufacturers determine the appropriate design and location of moisture sensors and moisture traps for their products. The proposal requires employers to ensure that their divers use these components consistent with the rebreather manufacturer's instructions. The moisture sensor must alert the diver of moisture in the breathing loop in sufficient time to terminate the dive and return safely to the surface.

(e) *CO_2 sensors.* An important component in controlling excessive CO_2 is the CO_2 sensor. Proposed Condition 1(e) specifies that employers must ensure that each rebreather contains a continuously functioning CO_2 sensor in the breathing loop, and that the rebreather manufacturer has approved the CO_2 sensor and its location in the breathing loop. Additionally, employers must integrate this CO_2 sensor with an alarm that operates in a visual (*e.g.*, digital, graphic, or analog) or auditory (*e.g.*, voice, pure tone) mode, is readily detectable by divers under the diving conditions in which they operate, and remains continuously activated when the inhaled CO_2 level reaches and exceeds 0.005 atmospheres absolute (''ATA'').[1]

(f) *Calibrating CO_2 sensors.* To ensure that CO_2 sensors operate correctly, proposed Condition 1(f) states that employers must, before each day's diving operations (and more often when necessary) calibrate each CO_2 sensor according to the sensor manufacturer's instructions. In doing so, they are to maintain the accuracy of the equipment and procedures used to perform the calibration to within 10% of a CO_2 concentration of 0.005 atmospheres absolute or less according to the sensor manufacturer's instructions. Using this equipment, they must calibrate the CO_2 sensor to within 10% of a CO_2 concentration of 0.005 ATA or less.

(g) *Faulty CO_2 sensors.* When a sensor fails to meet this accuracy standard, proposed Condition 1(g) requires employers to replace the faulty sensor, and to ensure the accuracy of the

[1] ATA, as used in this notice, is the partial pressure of a constituent gas in the total pressure of a breathing gas. When the percentage of the constituent gas in the breathing gas remains constant throughout a dive, its partial pressure or ATA, increases in direct proportion to increases in diving depth.

replacement sensor before placing the rebreather in operation. Determining the accuracy of CO_2 sensors is necessary to enable employers to eliminate sensors that are unreliable or that cannot function under rugged diving conditions. Using a test or standard gas containing a CO_2 concentration of 0.005 ATA or less will ensure that the sensors can accurately detect CO_2 levels that can be harmful to the divers (see Ex. 3–12, p. 3–10). In view of the harmful effects that can result from high levels of CO_2, the sensors need to have a maximum error rate of no more than 10% of a CO_2 partial pressure of 0.005 ATA. This limit would provide an adequate safety margin to allow employees to detect CO_2 accumulation, make a preliminary effort to identify the cause and adjust breathing-system controls, and ascend to the surface if necessary.

(h) *CO_2-sorbent materials.* This proposed condition allows employers to implement the manufacturers' schedules for replacing the canister of CO_2-sorbent material in the rebreather as an alternative to using continuously functioning CO_2 sensors (see proposed Condition 1(e)). The proposed condition permits employers to use such a schedule only after the rebreather manufacturer develops the schedule according to the canister-testing protocol specified below in proposed Condition 11. This proposed requirement would ensure that the canister-replacement schedule meets quality-control criteria, including an assessment of the physical properties of the CO_2-sorbent material and an evaluation of the canister's effectiveness using a standard canister-testing protocol (*e.g.*, see proposed Condition 11 (''Testing Protocol for Determining the CO_2 Limits of Rebreather Canisters''). The protocol would permit the employer to make reliable estimates of canister duration, thereby allowing replacement of the canister before the CO_2-sorbent material fails and the diver breathes excessive levels of CO_2.

(i) *Commercially pre-packed cartridges.* When the employer uses a CO_2-sorbent replacement schedule, proposed Condition 1(i) requires the employer to ensure that each rebreather uses a manufactured (*i.e.*, commercially pre-packed), disposable scrubber cartridge. This cartridge must contain a CO_2-sorbent material that is approved by the rebreather manufacturer and is capable of removing CO_2 from the divers' exhaled gas. In this regard, the canister must maintain the CO_2 level in the breathable gas (*i.e.*, the gas a diver is inhaling directly from the regulator) below a partial pressure of 0.01 ATA.[2] The Agency believes that this proposed condition would ensure proper compression and uniform distribution of the sorbent material in the cartridge, thereby preventing ''channeling'' in the material.[3] By preventing channeling, the proposed condition would lower the diver's risk of rebreathing exhaled breathing gas that is high in CO_2.

(j) *Alternative to commercially pre-packed cartridges.* Under this proposed condition, employers may fill CO_2 scrubber cartridges manually instead of using commercially pre-packed cartridges. This practice would be acceptable if the employer meets all of the following conditions: The rebreather manufacturer permits employers to use this alternative method; the employer implements the alternative method according to the rebreather manufacturer's instructions; and the employer can demonstrate that the alternative method meets the performance requirements for commercially pre-packed cartridges specified by proposed Conditions 1(h) and 1(i). Therefore, the employer must be able to demonstrate to an OSHA compliance officer during an inspection that the manually filled cartridges are at least as effective as commercially pre-packed cartridges in removing CO_2 from the breathing loop. The Agency believes that employers can obtain information regarding the effectiveness of manually filled and pre-packed cartridges from the rebreather manufacturers.

(k) *Information module.* Condition 1(k) specifies that employers must ensure that their divers use an information module that provides them with critical dive information regarding electrical functions, gas pressures, and water temperature. For all rebreathers, the module must contain visual or auditory warning devices that would alert the diver to electrical weaknesses or failures (*e.g.*, solenoid failure, low battery levels). In addition, modules used in semi-closed circuit rebreathers must contain visual displays for the partial pressure of CO_2, or deviations above and below a preset CO_2 partial pressure of 0.005 ATA. For closed-circuit rebreathers, the module also must have visual displays for the partial pressures of O_2 and CO_2, or deviations above and below a preset CO_2 partial pressure of 0.005 ATA and a preset O_2 partial pressure of 1.40 ATA, plus a visual display for both gas temperature in the breathing loop and water temperature (see the discussion of water- and gas-temperature sensors under proposed Condition (2)(a) below). Warning divers of electrical weaknesses and failures would alert them that they should stop relying on their electrically operated equipment, especially sensors, and take protective actions. Providing information about O_2 and CO_2 partial pressures will alert divers to toxic levels of these gases in time for them to prevent extended exposure.

While employers could provide recreational diving instructors and diving guides with dive-decompression computers for these purposes, OSHA believes that such computers are unnecessary because the divers would be diving within no-decompression limits, and the technical capability of dive-decompression computers far exceeds what is needed for no-decompression dives.

(l) *Checking electrical power and circuits.* As noted above for proposed Condition 1(k), the information module must warn divers of low battery voltage when they are operating either semi-closed-circuit and closed-circuit rebreathers. In this regard, a partial or total electronic failure could interfere with sensor and control systems and have serious safety consequences for the diver. Therefore, OSHA believes that the diver's safety depends on properly operating electrical power supplies and electrical and electronic circuits. Accordingly, the proposed alternative would require employers to ensure that the electrical power supplies and electrical and electronic circuits in each rebreather are operating as required by the rebreather manufacturer's instructions. The employer must check for proper operation prior to beginning diving operations each day, and more often when necessary.

2. Special Requirements for Closed-Circuit Rebreathers

(a) *Supply-pressure and temperature sensors.* This proposed condition requires employers to ensure that closed-circuit rebreathers use supply-pressure sensors for the O_2 and diluent gases (*i.e.*, air or nitrogen), as well as continuously functioning sensors for detecting temperature in the inhalation side of the breathing loop and in the ambient water. Supply-pressure sensors

[2] NOAA finds that physiological ''strain'' responses begin to develop with exposure to CO_2 concentrations over 0.03 ATA (Ex. 3–12, p. 3–10). Therefore, OSHA believes that a threshold limit for CO_2 of 0.01 ATA will provide divers with an adequate margin of protection from these effects.

[3] ''Channeling'' describes open spaces (or channels) that form in the sorbent material, and that permit exhaled breathing gas to pass through that part of the material to the inhalation side of the breathing apparatus with little or no absorption of the CO_2 contained in the exhaled breathing gas. This condition typically results from failing to compress the sorbent material uniformly in the canister (*e.g.*, by shaking the canister vigorously).

would inform divers of the remaining supply of breathing-gas ingredients (*i.e.*, O_2 and air or nitrogen), thereby preventing an unexpected loss of breathing gas during a dive; Low gas supplies would alert the divers to an unusually high consumption of breathing gas, indicating a possible problem with the rebreather. A gas loss also could increase the need for a diver to make a rapid (*i.e.*, emergency) ascent to the surface during a dive, which could result in over-pressurization of the lungs associated with AGE.

OSHA believes that temperature sensors improve diver safety. Water-temperature sensors alert divers to the possibility of hypothermia. In addition, the efficiency of the CO_2-sorbent material deteriorates with decreasing temperatures (see Reference (4), Section III below). Breathing-loop temperature sensors and water-temperature sensors allow divers to estimate the duration of their CO_2-sorbent material. When divers are able to estimate the duration of their CO_2-sorbent material, they can judge how long they can continue diving even if their CO_2 sensors malfunction.

(b) *O_2 sensors.* Under this proposed condition, employers must ensure that at least two O_2 sensors are located in the inhalation side of the breathing loop, and that these O_2 sensors function continuously, are temperature compensated, and approved by the rebreather manufacturer. OSHA believes that this proposal would provide the divers with critical information regarding O_2 levels in the breathing gas, thereby preventing O_2 deficiency or O_2 toxicity resulting, respectively, from low or high O_2 levels in the breathing-gas mixture. By assuring appropriate levels of O_2, the proposed condition would minimize the need for emergency escape and, as a consequence, reduce the risk of developing AGE.

(c) *Calibrating O_2 sensors.* Proposed Condition 2(c) specifies that employers, before the start of each day's diving operations, and more often when necessary, must calibrate O_2 sensors as required by the sensor manufacturer's instructions. Therefore, before they place a rebreather in operation, employers must: (i) Ensure that the equipment and procedures used to perform the calibration are accurate to within 1% of the O_2 fraction by volume; (ii) maintain the accuracy of the calibration equipment as required by the manufacturer of the equipment; (iii) ensure that the sensors are accurate to within 1% of the O_2 fraction by volume; (iv) replace O_2 sensors when they fail to meet the accuracy requirements specified above in proposed Condition 2(c)(iii); and (v) ensure that the replacement O_2 sensors meet the accuracy requirements specified above in proposed Condition 2(c)(iii).

As noted under proposed Condition 3 below, maintaining accurate O_2 levels in the breathing loop is critical to a diver's safety and health. To assure effective operation of O_2 sensors for this purpose, the introduction to proposed Condition 2(c) would require the employer to assess the accuracy of O_2 sensors before the start of each day's diving operations, and more often when necessary. Such an approach is consistent with the usual and customary practices of the rebreather community (see Ex. 3–4, pp. 4–1 through 4–13, and 14–2). In addition, the introduction proposes that the calibration procedures conform to the sensor manufacturer's instructions; this proposal would ensure that the sensors measure accurately the partial pressure of O_2 in the breathing loop.

Proposed Condition 2(c) would provide assurance that divers always have accurate information regarding the level of O_2 in the breathing loop, thereby enabling them to take corrective action should the O_2 level exceed the parameters proposed below in Condition 3 (*e.g.*, decrease O_2 concentration, switch to the ''bail-out system'' and egress to the surface (see proposed Condition 7 below)).[4] Therefore, accurate information regarding the O_2 level is critical to preventing the central nervous system and pulmonary effects of O_2 toxicity (see proposed Condition 3 below for a detailed discussion of these effects).

In view of the harmful effects that can result from breathing high levels of O_2, OSHA believes that O_2 sensors and associated calibrating equipment and procedures need to be accurate to ''within 1% of the O_2 fraction by volume.'' Assuming that the O_2 sensor and calibrating equipment-procedure each underestimate O_2 at the maximum proposed rate of 1%, and that the diver is breathing a nitrox mix containing 40% O_2 by volume or an O_2 partial pressure of 1.40 ATA (the maximum O_2 concentrations permitted under proposed Condition 3 below), the error would be ±0.8% when the O_2 gauge shows the O_2 level in the breathing loop to be 40% by volume, or ±0.028 ATA when it shows the O_2 level to be 1.40 ATA. The Agency believes that this level of error is acceptable, and well within the O_2 toxicity limits demonstrated by the available evidence (see proposed Condition 3 below). Therefore, this level of accuracy would provide an adequate safety margin for the divers to detect anomalous O_2 concentrations, to attempt to identify the cause and adjust breathing-system controls, and to ascend to the surface when necessary.

(d) *Controlling O_2 delivery.* This proposed condition requires employers to ensure that closed-circuit rebreathers have: (i) A gas-controller package with electrically-operated solenoid O_2-supply valves; (ii) a pressure-activated regulator with a second-stage diluent-gas addition valve; (iii) a manually-operated gas-supply bypass valve to add O_2 and diluent gas to the breathing loop; and (iv) separate O_2 and diluent-gas cylinders to supply the breathing-gas mixture. Under this proposed condition, closed-circuit rebreathers must automatically inject O_2 into the breathing loop to maintain the pre-established O_2 partial pressure in the breathable gas, and automatically add diluent gas (*i.e.*, nitrogen or air) through the regulator to compensate for decreases in gas volume during descent. The diver must also be able to control these functions manually using gas-supply bypass valves provided on the equipment. This equipment would maintain O_2 levels in the breathable gas within the range of partial pressures specified by proposed Condition 3 below, thereby providing assurance that sufficient and reliable breathing-gas pressure are available to deliver breathable gas to the diver without adversely affecting the diver's breathing effort. By reducing the diver's breathing effort, these proposed conditions would reduce CO_2 accumulation caused by an increased rate of breathing and, in turn, would lower the risk of CO_2 toxicity. In addition, by maintaining O_2 in the breathing loop at pre-established levels, this proposal would ensure that divers conform to the pre-established 24-hour single-exposure O_2 limit selected under proposed Condition 4 below.

Paragraph (iv) of proposed Condition 2 requires that employers use separate cylinders to provide the O_2 and diluent gas in the breathing-gas mixture. This proposal would give the diver independent control of these breathing-gas components; such control could be automatic or manual, or some combination of these two modes.

3. O_2 Concentration in the Breathing Gas

Under this proposed condition, employers must ensure that the fraction of O_2 in the nitrox breathing-gas mixture exceeds the fraction of O_2 in compressed air (*i.e.*, more than 22% by volume). For rebreathers, the fraction of O_2 must never exceed an O_2 partial

[4] Although low O_2 levels are rare under nitrox breathing conditions, the sensors also would detect levels of O_2 less than 22% by volume (see proposed Condition 3 below).

pressure of 1.40 ATA; and for open-circuit SCUBA, the O_2 fraction must never exceed 40% by volume or an O_2 partial pressure of 1.40 ATA, whichever exposes divers to less O_2. The proposed requirement that the fraction of O_2 be more than 22% is consistent with the definition of nitrox breathing-gas mixtures, *i.e.*, that they contain more O_2 than air. Specifying upper limits for the O_2 component in the nitrox breathing-gas mixture would prevent divers from developing O_2 toxicity.

The available evidence supports the Agency's conclusion that exposure to a maximum O_2 level of 1.40 ATA (or 40% by volume for open-circuit SCUBA) would prevent O_2 toxicity.[5] Several previous studies found that no O_2 toxicity developed while breathing 1.40 ATA of O_2 for extended periods, but breathing 1.60 ATA of O_2 for the same periods resulted in a significant increase in O_2 toxicity (see Exs. 3–4 (pp. 3–5 through 3–16, P–15 and P–16, and P–37 through P–43), 3–9, and 3–10). OSHA could find no studies showing that O_2 toxicity developed when divers used O_2 at the partial pressures and for the durations proposed in this rulemaking, although in one study, two divers developed pulmonary toxicity when exposed to 1.40 ATA of O_2 for a total of 55 hours over a 3-day period (Ex. 3–4, p. 3–9). However, such an exposure is far in excess of the maximum time limit that recreational divers would experience, or that the O_2-exposure limits specified in the 2001 NOAA Diving Manual or 1995 DSAT[6] report would permit (see discussion regarding proposed Condition 4(a) below).

4. Limiting O_2 Partial Pressure and Diving Depth

(a) *Limiting O_2 partial pressure.* Proposed Condition 4(a) identifies the procedures employers would use to prevent O_2 toxicity. Accordingly, employers must: (i) Determine a diver's O_2 exposure duration using the maximum partial-pressure O_2 exposure during the dive and the total dive time (*i.e.*, from the time the diver leaves the surface until the diver returns to the surface); and (ii) using the diver's exposure duration, ensure that a diver exposed to partial pressures of O_2 between 0.60 and 1.40 ATA does not exceed the 24-hour single-exposure O_2 limits specified by the 2001 NOAA Diving Manual (see Section III below, Reference (1), p. 3–23) or by the 1995 DSAT report entitled ''Enriched Air Operations and Resources Guide'' (see Section III below, Reference (2), p. 34).

The risk of O_2 toxicity increases with O_2 partial pressure (*i.e.*, dive depth) and dive duration. Therefore, as required by proposed Condition 4(a)(i), employers must use both of these factors to determine O_2 exposure durations.

Proposed Condition 4(a)(ii) refers to 24-hour single-exposure O_2 limits specified in the 2001 NOAA Diving Manual and the 1995 DSAT report entitled ''Enriched Air Operations and Resources Guide.'' Both NOAA and DSAT developed their O_2-exposure limits using models and theories extensively tested in the field for safety and efficacy. The recreational diving industry recognizes and uses both procedures, and, as OSHA noted in granting a permanent variance to Dixie, both procedures would afford divers adequate protection against O_2 toxicity.

Under proposed Condition 4(a), when the employer determines exposure durations and limits divers' exposures accordingly, the Agency believes that they will reduce the divers' risk of O_2 toxicity to the rate found among divers who breathe compressed air from open-circuit SCUBA during no-decompression dives.

(b) *Limiting diving depth.* This proposed condition requires that employers limit the divers covered by this proposed alternative to a maximum depth of 130 fsw or to a maximum O_2 partial pressure of 1.40 ATA, whichever exposes them to less O_2; this proposed condition would apply regardless of the diving equipment they use. This proposed condition would impose an additional constraint on O_2 exposure, further reducing the risk of O_2 toxicity. Moreover, the proposed condition would aid in preventing DCS by limiting the divers' nitrogen exposure; this limitation occurs because O_2 displaces nitrogen in the volume of breathing gas available for use. Therefore, limiting nitrogen exposure and restricting diving depth to 130 fsw would reduce the risk of DCS and, consequently, the need for decompression chambers.

Lowering the partial pressure of nitrogen in a diver's body fluids and tissues, especially in the central nervous system, also would decrease the risk of nitrogen narcosis. Nitrogen narcosis is an anesthetic condition that results when high partial pressures of nitrogen are present in central nervous system tissues; the condition can impair a diver's performance and, in severe cases can result in injury or death (see Section III below, Reference (1), p. 3–20).

5. Mixing and Analyzing the Breathing Gas

(a) *Mixing of breathing gas by the employer.* Under this proposed condition, when employers prepare the breathing-gas mixture, they must: (i) Ensure that properly trained personnel mix nitrox breathing gases, and that nitrogen is the only inert gas used in the breathing-gas mixture; and (ii) ensure that they mix the appropriate breathing-gas mixture before delivering it to the breathing-gas cylinders, using the continuous-flow or partial-pressure mixing techniques specified in the 2001 NOAA Diving Manual, or using a filter-membrane system. This provision would provide quality control over the mixing process, so that the breathing-gas mixture contains the correct proportions of O_2 and diluent gas (*i.e.*, air or nitrogen). It also limits the diluent gas to air or nitrogen because OSHA believes that not enough information is available on other inert diluent gases (*e.g.*, helium, argon, neon, hydrogen) or on trimix (three gas) breathing-gas mixtures to ensure the health and safety of divers under the diving conditions specified by this proposal.

This proposed condition also states a general requirement that mixing processes produce the proper proportions of O_2 and diluent gas prior to filling the SCUBA cylinders; this requirement would provide assurance that the divers' breathing-gas mixtures are correct and safe for use. In addition, it specifies that employers must select from among several mixing techniques commonly used and accepted by the diving industry. These techniques include the use of a ''filter-membrane system,'' a recently developed mixing technique that de-nitrogenates air (*i.e.*, removes nitrogen from air using a filter membrane).[7] After reviewing the technical literature available for this mixing system, the Agency believes that filter-membrane systems, which are commercially available from several manufacturers, would reduce the hazards associated with producing high-O_2 breathing-gas mixtures (*e.g.*, fire, explosion) because the proportion of O_2

[5] Excessive O_2 can impair a diver's central nervous system, resulting in seizures (and, as a consequence, death by drowning); it also can damage to the lungs and compromised pulmonary function.

[6] ''DSAT'' is an acronym for ''Diving Science and Technology,'' the research component of the International Professional Association of Diving Instructors, Inc., a trade association representing recreational diving instructors.

[7] Filter-membrane systems produce nitrox breathing-gas mixtures in two steps: First, they route air through filters to remove hydrocarbons and other contaminants; then they pass the decontaminated air through membranes that transfer O_2 across the membrane fibers at higher rates than nitrogen (hence, ''de-nitrogenating'' the air). As the rate of air flow across the membrane fibers increases, the resulting ratio of O_2 to nitrogen also increases.

in these systems never exceeds 40% by volume.

(b) *Analyzing O_2.* This proposed condition requires employers, before the start of each day's diving operations, to determine the O_2 fraction of the breathing-gas mixture using an O_2 analyzer. In doing so, they must: (i) Ensure that the O_2 analyzer is accurate to within 1% of the O_2 fraction by volume; and (ii) maintain this accuracy as required by the manufacturer of the analyzer. These provisions would ensure that the proportions of O_2 and diluent gas in the breathing-gas mixtures conform to pre-established levels of these gases, thereby ensuring that divers remain within the 24-hour single-exposure O_2 limits under proposed Condition 4 above. The accuracy requirements specified by these provisions are consistent with the accuracy requirements for O_2 found in other requirements of this proposal, and serve the same purpose described for these requirements (see the detailed discussion of these requirements in proposed Condition 2(c) above).

(c) *Commercially supplied breathing gas.* When the breathing gas is a commercially supplied nitrox breathing-gas mixture, this proposed condition requires employers to ensure that the O_2 is Grade A (also known as ''aviator's oxygen'') or Grade B (referred to as ''medical-industrial oxygen''), and meets the specifications, including the purity requirements, found in the ANSI-Compressed Gas Association Commodity Specification for Air, G–7.1–1997. In addition, employers must ensure that the commercial supplier: (i) Determines the O_2 fraction in the breathing-gas mixture using an analytic method that is accurate to within 1% of the O_2 fraction by volume; (ii) makes this determination when the mixture is in the charged tank and after disconnecting the charged tank from the charging apparatus; (iii) documents the O_2 fraction in the mixture; and (iv) provides the employer with a written certification of the O_2 analysis.

OSHA believes that many employers covered by this proposal purchase breathing-gas mixtures commercially. Specifying grades A and B for the O_2 would ensure that divers use the purest O_2 with optimal moisture content in their nitrox breathing-gas mixtures, thereby preventing them from inhaling contaminants, including hydrocarbons, that are known safety hazards. In addition, the O_2 would be at comfortable moisture levels, which would help maintain normal pulmonary function.

The proposed condition also controls the O_2 levels in the mixture by requiring that the accuracy of the method used to analyze O_2 conforms to the tolerance limits specified above under proposed Condition 5(b). The commercial suppliers must analyze the breathing-gas mixture actually contained in the SCUBA cylinders to determine the fraction of O_2 that the divers will breathe, unaffected by O_2 in the storage banks used to fill the SCUBA cylinders. The employer must ensure that the supplier of the breathing-gas mixture documents the O_2 fraction contained in the cylinder mixture, and certifies these results in writing. The written certification serves as a measure of quality assurance, and provides employers with documentation that the breathing-gas mixture contains the required fraction of O_2.

(d) *Using a compressor.* When employers produce nitrox breathing-gas mixtures, before using a compressor in which the gas pressure in any system component exceeds 125 psi, this proposed condition requires them to do the following: (i) Have the compressor manufacturer certify in writing that the compressor is suitable for mixing high-pressure air with the highest O_2 fraction used in the nitrox breathing-gas mixture; (ii) ensure that the compressor is oil-less or oil-free and rated for O_2 service unless the employer complies with the requirements of proposed Condition 5(e) below; and (iii) ensure that the compressor meets the requirements specified in paragraph (i)(1) and (i)(2) of § 1910.430 whenever the highest O_2 fraction used in the mixing process exceeds 40% by volume. The purpose of these proposed conditions is to prevent O_2 explosions during the mixing process, the risk of which increases when gas pressure in a system component exceeds 125 psi.

The requirements of Condition 5(d) would provide quality assurance that the compressor is designed and built so that its components cannot serve as ignition sources that could cause an O_2 explosion. However, if the compressors are not rated as oil-less or oil-free (*i.e.*, oil is used to lubricate components), paragraph (ii) of this condition requires that the compressors comply with the provisions of Condition 5(e) below to prevent the lubricating oil from serving as an ignition source. Paragraph (iii) of this condition addresses cascading processes in which an employer takes O_2 from storage banks that contain O_2 concentrations higher than 40% by volume, and mixes it with diluent gas from separate cylinder banks. The mixed product is a final breathing-gas mixture that does not exceed 40% by volume as required above by proposed Condition 3. Equipment used for this purpose must comply with paragraphs (i)(1) and (i)(2) of § 1910.430 (''Oxygen safety''). These paragraphs require employers to use equipment designed for O_2 service and to clean the equipment of flammable materials before such use. Together with the other provisions of this proposed condition, these equipment requirements would reduce the risk of an O_2 explosion.

(e) *Oil-lubricated compressors.* Before an employer produces nitrox breathing-gas mixtures using an oil-lubricated compressor to mix high-pressure air with O_2, and regardless of the gas pressure in any system component, this proposed condition requires that the employer: (i) Have the compressor manufacturer certify in writing that the compressor is suitable for mixing the high-pressure air with the highest O_2 fraction used in the nitrox breathing-gas mixture; (ii) filter the high-pressure air to produce O_2-compatible air; (iii) have the filter-system manufacturer certify in writing that the filter system used for this purpose is suitable for producing O_2-compatible air; (iv) continuously monitor the air downstream from the filter for hydrocarbon contamination; and (v) use only uncontaminated air (*i.e.*, air containing no hydrocarbon particulates) for the nitrox breathing-gas mixture.

Oil-based lubricants contain hydrocarbons that can ignite in the presence of an enriched O_2 environment during the mixing process, causing an explosion that can injure or kill employees. OSHA believes that these proposed requirements would reduce this risk by ensuring that high-pressure O_2 being pumped through the compressor remains isolated from the oil-based lubricant. Under the proposed conditions, the employer's actions will assure that the air used for the nitrox breathing-gas mixture is not contaminated, while the manufacturer's certification will provide assurance that the equipment will produce and filter this mixture safely. As an additional safety precaution, the monitoring requirement proposed under paragraph (v) would warn the employer that high-pressure O_2 is mixing with the oil-based lubricant, and to take emergency action (*e.g.*, shut off O_2 flow to the compressor and then purge the compressor with an inert gas).

(f) *Compliance with other OSHA standards.* Under this proposed condition, employers must ensure that SCUBA equipment using nitrox breathing-gas mixtures or pure O_2 under high pressure (*i.e.*, exceeding 125 psi) complies with the requirements specified by paragraphs (i)(1) and (i)(2) of § 1910.430. This provision ensures

that this equipment is free of ignition sources that could cause an O_2 explosion. As noted above in the discussion of proposed Condition 3(d)(iii), paragraphs (i)(1) and (i)(2) of § 1910.430 would reduce this risk by requiring employers to use diving equipment designed for O_2 service and to clean the equipment of flammable materials before such use.[8]

6. Use of No-Decompression Limits

(a) *No-decompression procedures.* Under this proposed condition, employers must ensure that divers using nitrox breathing-gas mixtures remain within the no-decompression limits specified for single and repetitive air diving and published in the 2001 NOAA Diving Manual (see Section III below, Reference (1)) or the 1994 DSAT report entitled ''Development and Validation of No-Stop Decompression Procedures for Recreational Diving: The DSAT Recreational Dive Planner'' (see Section III below, Reference (3)). This proposed condition allows employers to use the no-decompression limits published in the 2001 NOAA Diving Manual or the 1994 DSAT no-decompression tables. OSHA intends to ensure that the divers using nitrox mixtures under the proposed alternative receive the same protection against DCS as is afforded to divers who use air. For this reason, the proposed condition requires that employers ensure that their divers never exceed the no-decompression limits published in either the 2001 NOAA Diving Manual or 1994 DSAT report; in determining these limits, employers must use the partial pressure of nitrogen in the nitrox breathing-gas mixture to derive the equivalent air depth for a specific dive duration (see Ex. 3–12, p. 15–7).

OSHA believes that by adopting these no-decompression limits, the proposed alternative would protect recreational diving instructors and diving guides at least as well as the use of compressed air supplied to open-circuit SCUBAs under no-decompression diving limits. The 1994 DSAT no-decompression limits have been determined to be reliable and valid, based on extensive laboratory and field testing, and have been widely accepted by both the diving and scientific communities (see Appendix E (''Comment and critique from the field'') of the 1994 DSAT report).

In determining its no-decompression limits for nitrox breathing-gas mixtures in its 2001 Diving Manual, NOAA applies the equivalent-air-depth (''EAD'') formula. Divers using nitrox breathing-gas mixtures can use the EAD formula to determine accurately the no-decompression limits for different nitrogen partial pressures. NOAA applies its EAD formula in determining what equivalent air decompression limits to use with nitrox breathing-gas mixtures. The formula assumes that equivalent nitrogen partial pressures and dive durations will result in similar DCS risk to dives performed with air. OSHA believes that the NOAA EAD formula can accurately estimate the DCS risk associated with nitrox breathing-gas mixtures based on equivalent nitrogen partial pressures and dive durations used in air diving. In the record granting a permanent variance to Dixie, OSHA received evidence addressing the safety and efficacy of the EAD formula from Dr. Edward D. Thalmann (Ex. 2–7). Dr. Thalmann is a world-renowned expert in treating diving-related medical emergencies among recreational divers; he is also the author of a number of scientific publications that address the causes and treatment of diving-related medical emergencies, especially DCS. Based on this research and his field experience, Dr. Thalmann stated that DCS associated with breathing a nitrox gas mixture ''should not be substantially different in incidence and severity compared to diving on air[,] provided the [n]itrox no-decompression times are computed from accepted air no-decompression limits using the [NOAA] EAD [formula].'' Dr. Thalmann concluded that, within these constraints, ''there is no rationale for having different requirements for * * * air and [n]itrox no-decompression diving.'' Based on Dr. Thalmann's comments, OSHA concludes that NOAA's EAD formula will translate accurately the partial pressure of nitrogen in a nitrox breathing-gas mixture to an equivalent air depth for a specific dive duration, and that employers can rely on this formula to determine safe no-decompression limits for their divers based on the equivalent air dives.

(b) *Dive-decompression computers.* This proposed condition permits employers to use dive-decompression computers designed to regulate decompression when the computers use the NOAA or DSAT no-decompression limits specified in proposed Condition 6(a) and provide output that reliably represents these limits. OSHA believes that dive-decompression computers are unnecessary because the divers would be diving within no-decompression limits, and the technical capability of most dive-decompression computers exceeds the requirements of no-decompression dives. Nevertheless, the proposal would allow employers the flexibility to use either manual calculations or dive-decompression computers to determine the no-decompression schedules, with the use of dive-decompression computers for this purpose being optional. However, when employers choose to use these computers, they also must provide their diver with specific decompression information, and have a hard-copy of the appropriate decompression tables at the dive site (see proposed Condition 9(c) below). Thus, the proposal specifies the conditions that employers must meet to ensure that their employees' diving activities conform to accepted no-decompression practices, whether or not they use dive-decompression computers.

The Agency finds that restricting the no-decompression limits programmed into the computers to those limits published by the 2001 NOAA Diving Manual and the 1994 DSAT report would prevent employers from using the computers to provide alternate no-decompression limits that could place divers at higher risk for DCS. Operating under this constraint, OSHA concludes that computers may provide an advantage over manual calculations because manual calculations are subject to human error, and computers may reduce such error.

7. Emergency Egress

(a) *Bail-out system for all SCUBAs.* For emergencies involving SCUBA malfunctions that could endanger diver health and safety (*e.g.*, high CO_2 levels), proposed Condition 7(a) requires employers to equip their divers with a reliable emergency-egress system (*i.e.*, a ''bail-out system''). The bail-out system would contain a separate supply of breathing gas, which can include air. In addition, the bail-out system would provide the breathing gas to the second stage of the SCUBA regulator. Accordingly, the proposed bail-out system would provide divers with the capability to shift to a known, safe, and immediately available breathing gas, and to terminate the dive safely whenever a CO_2-related problem or other emergency occurs.

(b) *Alternative bail-out system for open-circuit SCUBA.* The proposal would provide an alternative to the bail-out for divers using open-circuit SCUBA. Accordingly, when open-

[8] In addition, employers must comply with other OSHA standards that ensure accurate mixing and decontamination (especially hydrocarbon removal) of nitrox breathing gases, and that employees are protected properly during these activities. These standards include the appropriate provisions of §§ 1910.101 (''Compressed gas (general requirements)'') and 1910.169 (''Air receivers'').

circuit SCUBA provides the nitrox breathing-gas mixture, the proposal would permit employers to use the emergency-egress procedure (*i.e.*, a reserve breathing-gas supply) specified for open-circuit SCUBA by paragraph (c)(4)(i) of § 1910.424 instead of a separate bail-out breathing-gas system.

Paragraph (c)(4)(i) of § 1910.424 is an emergency-escape provision in OSHA's existing CDO standards that applies to divers who use air-supplied open-circuit SCUBA. Under this provision, employers can maintain a reserve supply of breathing-gas in the breathing-gas cylinders carried by the diver, and that the diver can access in an emergency by manually activating a J valve located on the supply manifold. Having already recognized the safety afforded to divers by this system in the context of air-supplied, open-circuit SCUBA diving, the Agency believes that it would provide a similar level of protection to divers who use open-circuit SCUBA supplied with nitrox breathing-gas mixtures.

(c) *Safety requirements.* This proposed condition requires employers to provide their divers with a system that performs reliably and supplies sufficient emergency breathing gas to enable the diver to terminate the dive and return safely to the surface. Accordingly, this proposed requirement would ensure that the bail-out system used by employees, whether it is an independent or integrated bail-out system, will function appropriately when needed by the diver for emergency egress. The bail-out system must enable the diver to terminate the dive and make a safe and orderly ascent to the surface under ''worst-case'' conditions, thereby preventing over-pressurization of the lungs associated with AGE. However, OSHA is not proposing a specific capacity for bail-out systems because it believes that the SCUBA manufacturers are in the best position to make this determination. In this regard, a rebreather manufacturer could determine the capacity that is needed for the bail-out system based on critical diving parameters (*e.g.*, depth of dive and breathing rate) provided by the employer.

8. Treating Diving-Related Medical Emergencies

(a) *Availability of medical resources.* This proposed condition requires that employers, prior to beginning diving operations each day, ensure that: (i) A hospital, qualified health-care professionals, and the nearest Coast Guard Coordination Center (or an equivalent rescue service operated by a State, county, or municipal agency) are available for diving-related medical emergencies; (ii) each dive site has a means to alert these treatment resources in a timely manner when a diving-related medical emergency occurs; and (iii) transportation to a suitable decompression chamber is readily available when no decompression chamber is at the dive site, and that this transportation can deliver the injured diver to the decompression chamber within two hours travel time from the dive site. Overall, the proposed provisions would avoid unnecessary delay in treating diving-related injuries by confirming that resources are on call and available to render appropriate treatment, by alerting them to the occurrence of a diving-related medical injury so they can initiate treatment action (*e.g.*, using a pre-programmed electronic system, list of telephone numbers), and by providing timely transportation for the injured diver to the treatment facility. OSHA believes that reducing treatment delay will improve the likelihood that an injured diver will recuperate fully from any diving-related injury.

Prior to granting the permanent variance to Dixie, OSHA requested Dr. Edward D. Thalmann to render an opinion on the likely incidence of AGE and DCS under the proposed variance conditions. In doing so, Dr. Thalmann reviewed available research studies, as well as data from the Diver Alert Network (''DAN'') (Ex. 2–7). With regard to AGE, Dr. Thalmann stated, ''[AGE] is a rare occurrence and can be avoided with proper training and experience,'' that it ''is essentially independent of the time at depth,'' and that ''there is no evidence * * * [to] suggest that the occurrence and outcome of [AGE] would be any different breathing a [n]itrox mixture [other] than air.'' In addressing DCS, Dr. Thalmann noted that DCS associated with breathing a nitrox gas mixture ''should not be substantially different in incidence and severity compared to diving on air[,] provided the [n]itrox no-decompression times are computed from accepted air no-decompression limits using the [NOAA] EAD [formula].''

Dr. Thalmann then discussed the two-hour transportation limit proposed for the Dixie variance by reviewing the available DAN data; he cautioned that these data ''apply to recreational diving only where the vast majority of diving is within no-decompression limits.'' Under these conditions, he found that for both pain-only DCS and DCS with severe neurological symptoms, a treatment delay of four hours can occur without diminishing treatment success (*i.e.*, complete relief of symptoms). In summary, Dr. Thalmann stated, ''There is no significant body of evidence to suggest that, so long as one is diving within accepted no-decompression limits breathing air or [n]itrox, having access to a recompression facility within 4 hours is inadequate.'' For the reasons set forth in Dr. Thalmann's expert opinion, OSHA believes that the proposed condition for availability of medical treatment would provide adequate employee safety.

(b) *O_2 treatment.* Oxygen treatment is the preferred means of initially treating AGE and DCS (see Section III below, Reference (1), pp. 3–19 and 3–28). This proposed condition would require the employer to ensure that portable O_2 equipment is available at the dive site to treat an injured diver. This equipment must deliver pure O_2 to a transparent mask that covers the injured diver's nose and mouth. To provide assurance that the O_2 is suitable for treatment purposes, this proposed condition also requires employers to use only O_2 that meets the criteria for Medical USP oxygen (Type I, Quality Verification Level A) of CGA G–4.3–2000 (''Commodity Specification for Oxygen''). Additionally, sufficient O_2 must be available to administer to the injured diver from the time the employer recognizes the symptoms of a diving-related medical emergency until the injured diver reaches a decompression chamber for treatment. This proposed condition would require that the O_2 supplied for this purpose be pure O_2, and that the injured diver receive the O_2 continuously from the time an employer detects the diving-related medical emergency until the diver begins treatment in a decompression chamber. These provisions would ensure that injured divers receive the maximum dose of O_2 possible to enhance treatment effectiveness. The transparent mask covering the diver's nose and mouth allows attendants to monitor the diver's breathing and provides an effective seal against O_2 loss.

(c) *Treatment personnel.* This proposed condition requires the employer to ensure that at least two attendants (either employees or non-employees) qualified in first-aid and administering O_2 treatment are available at the dive site to treat diving-related medical emergencies before starting each day's diving operations, and to verify their qualifications before using them for this purpose. Under these proposed requirements, only qualified personnel would administer initial treatment to injured divers. OSHA believes that personnel qualified in first aid and O_2 treatment would stabilize the

injured diver as rapidly as possible, thereby improving the effectiveness of subsequent treatment regimens. Regarding the use of non-employees, the Agency notes that the main purpose of the proposed condition is to ensure that properly qualified personnel are available for initial treatment, regardless of their employment status. However, recognizing that the employer may not be familiar with the qualifications of the non-employee involved in this procedure, OSHA is proposing that employers verify their qualifications prior to using them for this purpose.

9. Diving Logs and Decompression Tables

(a) *Diving log.* This proposed condition requires employers, before beginning diving operations, to (i) designate an employee or non-employee to make entries in a diving log, and (ii) verify that this designee understands the diving and medical terminology, as well as the proper procedures, for making such entries. Recognizing that many employers of recreational divers and diving guides are small businesses that may have difficulty finding an employee to make entries in the diving log, OSHA is proposing to allow non-employees to make entries in the log. The Agency believes that any properly qualified individual can make such entries, provided the employer verifies their qualifications before using them for this purpose; these qualifications include an understanding of the diving and medical terminology and established procedures needed to enter the required information accurately in a diving log.

(b) *Diving log requirements.* Proposed Condition 9(b) specifies that employers must: (i) Ensure that diving logs meet the information requirements specified by § 1910.423(d), including the requirement for DCS information when appropriate; and (ii) maintain diving logs in accordance with the provisions of § 1910.440, including the requirements for record availability, access to records by employees and OSHA, and retention of records. Employers covered by this proposal already are required to comply with these provisions because their employees breathe a mixed gas (*i.e.*, nitrox) during diving operations; this proposed paragraph merely emphasizes this important obligation. In addition, during inspections, OSHA intends to review these records to determine whether the procedures proposed in this rulemaking are providing adequate protection to recreational diving instructors and diving guides.

(c) *Availability of decompression tables.* This proposed condition requires employers to have a hard-copy of the no-decompression tables used for the dives (see proposed Condition 6(a) above) readily available at the dive site, whether or not the divers use dive-decompression computers. This condition would ensure that the parameters of the no-decompression limits are readily available and accessible as a reference source. In addition, a hard-copy of the decompression tables would serve both as a reference source should decompression become necessary, and as a back-up resource to divers with dive-decompression computers.

10. Diver Training

Under proposed Condition 10, employers must ensure that their divers receive training that enables them to perform their work safely and effectively while using open-circuit SCUBAs or rebreathers supplied with nitrox breathing-gas mixtures. Training would include the following areas: Recognizing the effects of breathing excessive CO_2 and O_2; taking appropriate action after detecting the effects of breathing excessive CO_2 and O_2; and properly evaluating, operating, and maintaining their diving equipment under the diving conditions they encounter. OSHA believes that such training would provide divers with the basic skills and knowledge necessary to ensure that diving is performed safely.

The proposed provision is performance-based, requiring employers to ensure that their employees are trained to perform safely and effectively while using open-circuit SCUBAs or rebreathers supplied with nitrox breathing-gas mixtures. In this regard, the Agency believes that employers are in the best position to determine when the training that their divers obtain is adequate to perform their jobs safely and effectively. However, the provision specifies several critical tasks that the recreational diving instructors and diving guides would have to perform safely and effectively, including detecting and managing excessive levels of CO_2 and O_2, and being able to evaluate, operate, and maintain their diving equipment. Such training would enable divers to take remedial action to prevent and escape the life-threatening effects of CO_2 and O_2 toxicity, including convulsions and loss of consciousness. In addition, OSHA believes that divers who know how to evaluate, operate, and maintain their open-circuit SCUBAs and rebreathers under the diving conditions they encounter will be less likely to require emergency egress because of equipment failure, thereby reducing the incidence of AGE from rapid ascents to the surface.

11. Testing Protocol for Determining the CO_2 Limits of Rebreather Canisters

This proposed condition specifies the requirements employers must follow when they use a schedule to replace depleted CO_2-sorbent material instead of using CO_2 sensors to detect when the material is no longer absorbing CO_2 effectively (see proposed Condition 1(h) above). Employers may use a CO_2-sorbent replacement schedule developed by a rebreather manufacturer only when the manufacturer has tested the canisters according to the proposed canister-testing protocol in Appendix C. The Agency adapted this protocol from the canister-testing parameters and statistical procedures developed by the U.S. Navy Experimental Diving Unit (''NEDU'') (see, respectively, Ex. 3–11 and Reference (4), Section III below); the NEDU is the only Federal agency involved in testing CO_2-sorbent replacement schedules. OSHA believes that the NEDU protocol provides valid and reliable data for determining CO_2-sorbent replacement schedules because they are carefully executed and control significant variables that deplete CO_2-sorbent materials, such as breathing rate (by using breathing machines) and ambient temperature.

(a) *Quality-control assessment of CO_2-sorbent material.* Under this proposed condition, employers must use CO_2-sorbent materials in rebreathers that have the necessary physical properties as determined by the following procedures: (i) The NATO CO_2 absorbent-activity test to assess the capacity of the material to absorb CO_2; (ii) the RoTap shaker and nested sieves to determine granule-size distribution; (iii) the NEDU-derived Schlegel test to assess the friability of the CO_2-sorbent material; and (iv) the NEDU's MeshFit software to evaluate mesh size conformance to specifications. These procedures would provide a quality-control assessment of CO_2-sorbent materials. By ensuring that these materials meet the physical criteria established by these procedures, employers would improve the reliability with which they estimate canister durations during diving operations; improved estimates would enable divers to replace CO_2-sorbent material before it fails (*i.e.*, before CO_2 increases to dangerous levels).

(b) *Testing canister function.* This proposed condition requires employers to provide divers with canisters for their rebreathers that have been tested using a protocol consisting of specified canister-testing methods, procedures,

and statistical analyses. This proposed canister-testing protocol measures the performance effects on canisters of the following three factors: Depth, exercise level (*i.e.*, ventilation rate), and water temperature. Depth is the maximum depth at which a diver would use the CO_2-sorbent material, which for this proposed amendment is 130 fsw. For the other variables, OSHA has selected three combinations of ventilation rates and CO_2-injection rates from the NEDU protocol to simulate three diverse levels of exercise (light, moderate, and heavy). The four water temperatures used in the proposed protocol are 40, 50, 70, and 90 degrees F (4.4, 10.0, 21.1, and 32.2 degrees C, respectively); these temperatures represent the wide range of water temperatures that recreational diving instructors and diving guides are likely to encounter.

For this application, the Agency has revised the NEDU protocol slightly by: Limiting the maximum depth to 130 fsw; requiring an O_2 fraction of 0.28 in the nitrox breathing-gas mixture (this fraction being the maximum O_2 concentration permitted at this depth by this proposal); providing tolerance limits for water temperatures; and defining canister duration as the time taken to reach 0.005 ATA of CO_2 (0.005 ATA of CO_2 is the level specified in this proposal as the maximum allowable amount of CO_2 in the breathing gas). In addition, the proposed protocol expressly prohibits the use of CO_2-sorbent replacement schedules based on extrapolation of the protocol results. NEDU's statistical procedures (see Section III below, Reference (4)) do not provide a method for extrapolating the duration of CO_2-sorbent materials beyond the results obtained during the canister-testing trials. Accordingly, the proposed canister-testing protocol provides improved validity and reliability of canister-replacement schedules, and will enable employers to replace CO_2-sorbent materials in a timely manner.

III. References

The preamble to this proposal cites the following references:

(1) National Oceanic and Atmospheric Administration (2001). NOAA Diving Manual: Diving for Science and Technology. Joiner, J. T. (ed.). Best Publishing Co., Flagstaff, AZ. (Ex. 3–12.)

(2) Diving Science and Technology (1995). ''Analysis of Proposed Oxygen Exposure Limits for DSAT Oxygen Exposure Table Against Existing Database of Manned Oxygen Test Dives.'' Enriched Air Operations and Resource Guide. International PADI, Inc., Rancho Santa Margarita, California. (Ex. 3–13.)

(3) R. W. Hamilton, R. E. Rogers, M. R. Powell, and R. D. Vann (1994). ''Development and Validation of No-Stop Decompression Procedures for Recreational Diving: The DSAT Recreational Dive Planner.'' Hamilton Research, Ltd., Tarrytown, New York. (Ex. 3–14.)

(4) J. R. Clarke. ''Statistically Based CO_2 Canister Duration Limits for Closed-Circuit Underwater Breathing Apparatus.'' U.S. Navy Experimental Diving Unit, Report 2–99, 1999. (Ex. 2–9.)

Copies of these references are available from the OSHA's Docket Office, Room N–2625, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington, DC 20210; telephone (202) 693–2350 or fax (202) 693–1648.

IV. Legal Considerations

Employers covered by this proposal currently are covered by OSHA's Commercial Diving Operations (CDO) standards at 29 CFR 1910, subpart T. The requirements of these standards are protecting their employees from significant risk. In issuing the variance from this standard, the Agency determined that the practices and protections in the variance would provide recreational diving instructors and diving guides with comparable protection to that provided by the CDO standards. The present proposal would extend these alternative protections to all such instructors and guides. In this regard, the proposed amendment would not replace existing requirements, but instead would be a limited alternative to them. Therefore, OSHA finds that the proposed amendment would not directly increase or decrease the protection afforded to employees, nor would it increase employers' compliance burdens. As demonstrated in the following sections, the proposed revision likely would reduce employers' compliance burdens by eliminating the requirement to have a decompression chamber at the dive site when they comply with the conditions specified in the proposed amendment.

V. Preliminary Economic Analysis and Regulatory Flexibility Certification

The proposed amendment is not a significant rulemaking under Executive Order 12866, or a ''major rule'' under the Unfunded Mandates Reform Act or Section 801 of the Small Business Regulatory Enforcement Fairness Act (SBREFA). The proposal would impose no additional costs on any private or public sector entity, and does not meet any of the criteria for a significant or major rule specified by the Executive Order or relevant statutes.

OSHA believes that the proposed amendment likely would offer employers of recreational diving instructors and diving guides an opportunity to expand these services into nitrox diving operations by eliminating costs associated with purchasing and maintaining a decompression chamber at the dive site when they comply with the conditions specified in the proposed amendment. By providing regulatory flexibility to these employers, the proposal may reduce their costs and increase productive time. Therefore, the Agency concludes that the proposed amendment would not impose any additional costs on these employers; consequently, the proposal requires no preliminary economic analysis. Furthermore, because the proposal imposes no costs on employers, OSHA certifies that it would not have a significant impact on a substantial number of small businesses; accordingly, the Agency need not prepare an initial regulatory flexibility analysis.

VI. Paperwork Reduction Act

After a thorough analysis of the proposal, OSHA believes that it contains the following two collection-of-information (*i.e.*, paperwork) requirements: Conditions 9(b)(i) and 9(b)(ii) of proposed Appendix C. Condition 9(b)(i) requires employers to ensure that the diving log conforms to the requirements specified by paragraph (d) (''Record of dive'') of § 1910.423, while Condition 9(b)(ii) specifies that employers must keep a record of the dive in accordance with § 1910.440 (''Recordkeeping requirements''). However, these paperwork requirements already apply to these employers under subpart T, regardless of this proposal, because their divers are using a mixed (*i.e.*, nitrox) gas breathing supply. The regulatory alternative in this proposed rulemaking only exempts the covered employers from having to maintain decompression chambers at the dive site, and does not exempt them from the other provisions of subpart T that apply to mixed-gas diving operations. Accordingly, the Agency already incorporates the time and cost burdens associated with these two paperwork requirements under Control No. 1218–0069.

Interested parties who wish to comment on OSHA's determination that this proposal contains no additional paperwork requirements must send their written comments to the Office of Information and Regulatory Affairs,

Attn: OMB Desk Officer for OSHA, Office of Management and Budget, Room 10235, 726 Jackson Place, NW., Washington, DC 20503. The Agency also encourages commenters to submit their comments on this paperwork determination to OSHA along with their other comments on the proposed rule.

VII. Federalism

The Agency has reviewed the proposed amendment to its Commercial Diving Operations standards according to the most recent Executive Order on Federalism (Executive Order 13132, 64 FR 43225, August 10, 1999). This Executive Order requires that Federal agencies, to the extent possible, refrain from limiting State policy options, consult with States before taking actions that restrict their policy options, and take such actions only when clear constitutional authority exists and the problem is of national scope. The Executive Order allows Federal agencies to preempt State law only with the expressed consent of Congress; in such cases, Federal agencies must limit preemption of State law to the extent possible.

Under section 18 of the OSH Act, Congress expressly provides OSHA with authority to preempt State occupational safety and health standards to the extent that the Agency promulgates a Federal standard under section 6 of the OSH Act. Accordingly, section 18 of the OSH Act authorizes the Agency to preempt State promulgation and enforcement of requirements dealing with occupational safety and health issues covered by OSHA standards unless the State has an OSHA-approved occupational safety and health plan (*i.e.*, is a State-plan State). (See *Gade* v. *National Solid Wastes Management Association,* 112 S. Ct. 2374 (1992).) Therefore, with respect to States that do not have OSHA-approved plans, the Agency concludes that this proposal conforms to the preemption provisions of the OSH Act. Additionally, section 18 of the OSH Act prohibits States without approved plans from issuing citations for violations of OSHA standards; the Agency finds that the proposed rulemaking does not expand this limitation.

OSHA has authority under Executive Order 13132 to propose this amendment to its Commercial Diving Operations standards because the problems addressed by these requirements are national in scope. In this regard, the proposed amendment offers thousands of employers across the nation whose divers provide recreational diving instruction and dive-guiding services an opportunity to expand these services into nitrox diving operations, and to do so without the expense involved in purchasing a decompression chamber. The proposed amendment would provide employers in every State with alternative means of compliance to protect their recreational diving instructors and diving guides from the risks of decompression sickness and arterial gas embolism while using a breathing-gas mixture consisting of a high percentage of oxygen mixed with nitrogen supplied by an open-circuit, semi-closed-circuit, or closed-circuit self-contained breathing apparatus.

Section 18(c)(2) of the OSH Act (29 U.S.C. 667(c)(2)) requires State-plan States to adopt OSHA standards, or develop alternatives, that are at least as effective as the OSHA amendment. The States have already adopted OSHA's Commercial Diving Operations (CDO) standards at 29 CFR 1910, subpart T, in particular, the decompression chamber provisions of paragraphs (b)(2) and (c)(3)(iii) of § 1910.423(b)(2) and paragraph (b)(1) of § 1910.426(b)(1). Compliance with the proposed amendment would only provide employers with an alternative to the requirements of the CDO standards; therefore, the alternative is not, itself, a mandatory standard. Accordingly, State-plan States are not obligated to adopt the final amendment that results from this rulemaking. Nevertheless, OSHA strongly encourages them to adopt to the final amendment to provide compliance options to employers in their States.

VIII. State Plans

The Agency strongly encourages the 23 States and two Territories with their own OSHA-approved occupational safety and health plans to revise their current Commercial Diving Operations standards when the Agency publishes the final amendment that results from this rulemaking. OSHA believes that such a revision would provide employers in the State-plan States the economic benefits that are likely to accrue from its enactment, while protecting the safety and health of recreational diving instructors and diving guides. These States and Territories are: Alaska, Arizona, California, Connecticut, New York (for State and local government employees only), Hawaii, Indiana, Iowa, Kentucky, Maryland, Michigan, Minnesota, Nevada, New Mexico, North Carolina, Oregon, Puerto Rico, South Carolina, Tennessee, Utah, Vermont, Virginia, Virgin Islands, Washington, and Wyoming.

IX. Unfunded Mandates

OSHA reviewed the proposed amendment according to the Unfunded Mandates Reform Act of 1995 (UMRA) (2 U.S.C. 1501 *et seq.*) and Executive Order 12875. As discussed above in section V (''Preliminary Economic Analysis and Regulatory Flexibility Certification'') of this preamble, the Agency has made a preliminary determination that the proposed amendment imposes no additional costs on any private or public sector entity. The substantive content of the proposed amendment applies only to employers of recreational diving instructors and diving guides, and compliance with the proposed amendment would be strictly optional for the employers. Accordingly, the proposed amendment would require no additional expenditures by either public or private employers.

OSHA standards do not apply to State and local governments, except in States that have voluntarily elected to adopt a State plan approved by the Agency. Consequently, the proposed amendment does not meet the definition of a ''federal intergovernmental mandate'' (see section 421(5) of the UMRA (2 U.S.C. 658(5)). In conclusion, the proposed amendment does not mandate that State, local, and tribal governments adopt new, unfunded regulatory obligations.

X. Applicability of Existing Consensus Standards

OSHA is not aware of any national consensus standards that are similar to the amendment that it is proposing in this rulemaking.

XI. Public Participation

The Agency requests members of the public to submit written comments and other information concerning this proposal. These comments may include objections to the proposal with or without a hearing request, as well as comments that endorse or support the proposed amendment set forth in this notice. OSHA welcomes such comments and information so that the record of this rulemaking will represent a balanced public response on the issues involved. See the sections above titled **DATES** and **ADDRESSES** for information on submitting these comments and information to the Agency. Submissions received within the specified comment period will become part of the record, and will be available for public inspection and copying in the OSHA Docket Office.

Under section 6(b)(3) of the OSH Act and 29 CFR 1911.11, members of the public may request an informal hearing by following the instructions under the section of this **Federal Register** notice titled **ADDRESSES.** These requests must include the objections to the proposal

that warrant a hearing. The party making objections that are part of a hearing request must:

- Include their name and address.
- Ensure that the request is sent or postmarked no later than April 10, 2003.
- Separately number each objection.
- Specify with particularity the grounds for each objection.
- Include a detailed summary of the evidence supporting each objection which they plan to offer at the requested hearing.

List of Subjects in 29 CFR Part 1910

Decompression chamber; Diving; Diving instruction; Occupational safety and health; Safety.

Authority and Signature

John Henshaw, Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington, DC 20210, directed the preparation of this notice. Accordingly, the Agency issues the proposed amendment under the following authorities: Sections 4, 6, and 8 of the OSH Act of 1970 (29 U.S.C. 653, 655, 657), Secretary of Labor's Order No. 5–2002 (67 FR 65008), and 29 CFR part 1911.

Signed at Washington, DC on January 3, 2003.

John L. Henshaw,

Assistant Secretary of Labor.

XII. Proposed Amendment to Standard

For the reasons stated in the preamble, the Agency proposes to amend 29 CFR part 1910, subpart T as follows:

PART 1910—[AMENDED]

Subpart T—[AMENDED]

1. Revise the authority citation for subpart T of part 1910 to read as follows:

Authority: Sections 4, 6 and 8 of the Occupational Safety and Health Act of 1970 (29 U.S.C. 653, 655, and 657); sec. 107, Contract Work Hours and Safety Standards Act (the Construction Safety Act) (40 U.S.C. 333); sec. 41, Longshore and Harbor Worker's Compensation Act (33 U.S.C. 941); Secretary of Labor's Order Nos. 8–76 (41 FR 25059), 9–83 (48 FR 35736), 1–90 (55 FR 9033), 6–96 (62 FR 111), 3–2000 (65 FR 50017), or 5–2002 (67 FR 65008), as applicable; 29 CFR part 1911.

2. Add new paragraph (a)(3) to § 1910.401 to read as follows:

§ 1910.401 Scope and application.

* * * * *

(a) * * *

(3) *Alternative requirements for recreational diving instructors and diving guides.* Employers of recreational diving instructors and diving guides may forego the decompression-chamber requirements specified by paragraphs (b)(2) and (c)(2)(iii) of § 1910.423 and paragraph (b)(1) of § 1910.426 when they meet all of the following conditions:

(i) The instructor or guide is engaging solely in recreational diving instruction or dive-guiding operations;

(ii) The instructor or guide is diving within the no-decompression limits in these operations;

(iii) The instructor or guide is using a nitrox breathing-gas mixture consisting of a high percentage of oxygen (more than 22% by volume) mixed with nitrogen;

(iv) The instructor or guide is using an open-circuit, semi-closed-circuit, or closed-circuit self-contained underwater breathing apparatus (SCUBA); and

(v) The employer of the instructor or guide is complying with all requirements of Appendix C of this subpart.

* * * * *

3. Add definitions for ''Dive-guiding operations'' and ''Recreational diving instructors'' in alphabetical order to § 1910.402 to read as follows:

§ 1910.402 Definitions.

* * * * *

Dive-guiding operations means leading small groups of trained sports divers, who use open-circuit, semi-closed-circuit, or closed-circuit SCUBA, to local undersea diving locations for recreational purposes.

* * * * *

Recreational diving instruction means training diving students in the use of recreational diving procedures and the safe operation of diving equipment, including open-circuit, semi-closed-circuit, or closed-circuit SCUBA during dives.

* * * * *

4. Add a new Appendix C to 29 CFR part 1910, subpart T to read as follows:

Appendix C to Subpart T of Part 1910—Alternative Conditions Under § 1910.401(a)(3) for Recreational Diving Instructors and Diving Guides (Mandatory)

Paragraph (a)(3) of § 1910.401 specifies that employers of recreational diving instructors and diving guides (hereafter, ''divers'') who comply with all conditions in this Appendix C do not need to provide a decompression chamber for their recreational diving training and dive-guiding operations as required under § 1910.423(b)(2) or (c)(3), or § 1910.426 (b)(1).

1. Equipment Requirements for Rebreathers

(a) Employers must ensure that employees operate each rebreather (*i.e.*, semi-closed-circuit and closed-circuit self-contained underwater breathing apparatuses (hereafter, ''SCUBAs'')) according to the rebreather manufacturer's instructions.

(b) Employers are to ensure that each rebreather has a counterlung that supplies a volume of breathing gas to their divers that is sufficient to sustain the divers' respiration rate, and that contains a baffle system that keeps moisture from entering the scrubber.

(c) Employers must place a moisture trap in the breathing loop of the rebreather, and ensure that:

(i) The rebreather manufacturer approves both the moisture trap and its location in the breathing loop; and

(ii) Employees use the moisture trap according to the rebreather manufacturer's instructions.

(d) Employers must ensure that each rebreather has a continuously functioning moisture sensor, and that:

(i) The moisture sensor connects to a visual (*e.g.*, digital, graphic, analog) or auditory (*e.g.*, voice, pure tone) alarm that is readily detectable by the divers under the diving conditions in which they operate and warns them of moisture in the breathing loop in sufficient time to terminate the dive and return safely to the surface; and

(ii) The divers use the moisture sensor according to the rebreather manufacturer's instructions.

(e) Employers are to ensure that each rebreather contains a continuously functioning CO_2 sensor in the breathing loop, and that:

(i) The rebreather manufacturer approves the location of the CO_2 sensor in the breathing loop;

(ii) The CO_2 sensor is integrated with an alarm that operates in a visual (*e.g.*, digital, graphic, analog) or auditory (*e.g.*, voice, pure tone) mode that is readily detectable by the divers under the diving conditions in which they operate; and

(iii) The CO_2 sensor remains continuously activated when the inhaled CO_2 level reaches and exceeds 0.005 ATA.

(f) Before each day's diving operations, and more often when necessary, employers must calibrate the CO_2 sensor according to the sensor manufacturer's instructions, and ensure that:

(i) The equipment and procedures used to perform this calibration are accurate to within 10% of a CO_2 concentration of 0.005 ATA or less;

(ii) They maintain this accuracy as required by the sensor manufacturer's instructions; and

(iii) The calibration of the CO_2 sensor is accurate to within 10% of a CO_2 concentration of 0.005 ATA or less.

(g) Employers must replace the CO_2 sensor when it fails to meet the accuracy requirements specified above in paragraph 1(f)(iii), and ensure that the replacement CO_2 sensor meets the accuracy requirements specified above in paragraph 1(f)(iii) before placing the rebreather in operation.

(h) As an alternative to using a continuously functioning CO_2 sensor,

employers may use schedules for replacing CO_2-sorbent material provided by the rebreather manufacturer. When doing so, employers must use:

(i) A CO_2-sorbent replacement schedule only when the rebreather manufacturer has developed the replacement schedule according to the canister-testing protocol specified below in Condition 11; and

(ii) A rebreather at a water temperature that is lower than the minimum, or higher than the maximum, water temperature used in the canister-testing protocol specified below in Condition 11 only when the rebreather manufacturer adds that lower or higher temperature to the protocol.

(i) When using CO_2-sorbent replacement schedules, employers must ensure that each rebreather uses a manufactured (*i.e.*, commercially pre-packed), disposable scrubber cartridge containing a CO_2-sorbent material that:

(i) Is approved by the rebreather manufacturer;

(ii) Removes CO_2 from the diver's exhaled gas; and

(iii) Maintains the CO_2 level in the breathable gas (*i.e.*, the gas that a diver inhales directly from the regulator) below a partial pressure of 0.01 atmospheres absolute (''ATA'').

(j) As an alternative to manufactured, disposable scrubber cartridges, employers may fill CO_2 scrubber cartridges manually with CO_2-sorbent material when:

(i) The rebreather manufacturer permits manual filling of scrubber cartridges;

(ii) The employer fills the scrubber cartridges according to the rebreather manufacturer's instructions;

(iii) The employer replaces the CO_2-sorbent material using a replacement schedule developed under paragraph 1(h) above; and

(iv) The employer demonstrates that manual filling meets the requirements specified above in paragraph 1(i).

(k) Employers must ensure that each rebreather has an information module that provides:

(i) Visual (*e.g.*, digital, graphic, analog) or auditory (*e.g.*, voice, pure tone) displays that effectively warn their divers of solenoid failure (when the rebreather uses solenoids) and other electrical weaknesses or failures (*e.g.*, low battery voltage);

(ii) For semi-closed circuit rebreathers, visual displays for the partial pressure of CO_2, or deviations above and below a preset CO_2 partial pressure of 0.005 ATA; and

(iii) For closed-circuit rebreathers, visual displays for: Partial pressures of O_2 and CO_2, or deviations above and below a preset CO_2 partial pressure of 0.005 ATA and a preset O_2 partial pressure of 1.40 ATA; gas temperature in the breathing loop; and water temperature.

(l) Before each day's diving operations, and more often when necessary, employers must ensure that the electrical power supplies and electrical and electronic circuits in each rebreather are operating as required by the rebreather manufacturer's instructions.

2. Special Requirements for Closed-Circuit Rebreathers

(a) Employers must ensure that closed-circuit rebreathers use supply-pressure sensors for the O_2 and diluent (*i.e.*, air or nitrogen) gases and continuously functioning sensors for detecting temperature in the inhalation side of the gas-loop and the ambient water.

(b) Employers are to ensure that:

(i) At least two O_2 sensors are located in the inhalation side of the breathing loop; and

(ii) The O_2 sensors are: Functioning continuously; temperature-compensated; and approved by the rebreather manufacturer.

(c) Before each day's diving operations, and more often when necessary, employers must calibrate O_2 sensors as required by the sensor manufacturer's instructions. In doing so, they must:

(i) Ensure that the equipment and procedures used to perform the calibration are accurate to within 1% of the O_2 fraction by volume;

(ii) Maintain this accuracy as required by the manufacturer of the calibration equipment;

(iii) Ensure that the sensors are accurate to within 1% of the O_2 fraction by volume;

(iv) Replace O_2 sensors when they fail to meet the accuracy requirements specified above in paragraph 2(c)(iii); and

(v) Ensure that the replacement O_2 sensors meet the accuracy requirements specified above in paragraph 2(c)(iii) before they place a rebreather in operation.

(d) Employers must ensure that closed-circuit rebreathers have:

(i) A gas-controller package with electrically-operated solenoid O_2-supply valves;

(ii) A pressure-activated regulator with a second-stage diluent-gas addition valve;

(iii) A manually operated gas-supply bypass valve to add O_2 or diluent gas to the breathing loop; and

(iv) Separate O_2 and diluent-gas cylinders to supply the breathing-gas mixture.

3. O_2 Concentration in the Breathing Gas

Employers must ensure that the fraction of O_2 in the nitrox breathing-gas mixture:

(a) Is greater than the fraction of O_2 in compressed air (*i.e.*, exceeds 22% by volume);

(b) For open-circuit SCUBA, never exceeds a maximum fraction of breathable O_2 of 40% by volume or a maximum O partial pressure of 1.40 ATA, whichever exposes divers to less O_2; and

(c) For rebreathers, never exceeds a maximum O_2 partial pressure of 1.40 ATA.

4. Limiting O_2 Partial Pressure and Diving Depth

(a) Regarding O_2 exposure, employers must:

(i) Ensure that the exposure of their divers to partial pressures of O_2 between 0.60 and 1.40 ATA does not exceed the 24-hour single-exposure time limits specified either by the 2001 National Oceanic and Atmospheric Administration Diving Manual (the ''2001 NOAA Diving Manual'') or by the report entitled ''Enriched Air Operations and Resources Guide,'' published in 1995 by the Professional Association of Diving Instructors (known commonly as the ''1995 DSAT Oxygen Exposure Table'') (see References (1) and (2) at the end of this appendix for complete information regarding these references); and

(ii) Determine a diver's O_2-exposure duration using the diver's maximum O_2 exposure (partial pressure of O_2) during the dive and the total dive time (*i.e.*, from the time the diver leaves the surface until the diver returns to the surface).

(b) Regardless of the diving equipment used, employers must ensure that their divers do not exceed a depth of 130 feet of sea water (''fsw'') or to a maximum O_2 partial pressure of 1.40 ATA, whichever exposes them to less O_2.

5. Mixing and Analyzing the Breathing Gas

(a) Employers must ensure that:

(i) Properly trained personnel mix nitrox-breathing gases, and that nitrogen is the only inert gas used in the breathing-gas mixture; and

(ii) When mixing nitrox-breathing gases, they mix the appropriate breathing gas before delivering the mixture to the breathing-gas cylinders, using the continuous-flow or partial-pressure mixing techniques specified in the 2001 NOAA Diving Manual, or using a filter-membrane system.

(b) Before the start of each day's diving operations, employers must determine the O_2 fraction of the breathing-gas mixture using an O_2 analyzer. In doing so, they must:

(i) Ensure that the O_2 analyzer is accurate to within 1% of the O_2 fraction by volume; and

(ii) Maintain this accuracy as required by the manufacturer of the analyzer.

(c) When the breathing gas is a commercially supplied nitrox breathing-gas mixture, employers must ensure that the O_2 is Grade A (also known as ''aviator's oxygen'') or Grade B (referred to as ''industrial-medical oxygen''), and meets the specifications, including the purity requirements, found in the ANSI-Compressed Gas Association Commodity Specification for Air, G–7.1–1997. In addition, employers are to ensure that the commercial suppliers:

(i) Determine the O_2 fraction in the breathing-gas mixture using an analytic method that is accurate to within 1% of the O_2 fraction by volume;

(ii) Make this determination when the mixture is in the charged tank and after disconnecting the charged tank from the charging apparatus;

(iii) Document the O_2 fraction in the mixture; and

(iv) Provide the employer with a written certification of the O_2 analysis.

(d) Before producing nitrox breathing-gas mixtures using a compressor in which the gas pressure in any system component exceeds 125 pounds per square inch (psi), employers must:

(i) Have the compressor manufacturer certify in writing that the compressor is suitable for mixing high-pressure air with the highest O_2 fraction used in the nitrox breathing-gas mixture;

(ii) Ensure that the compressor is oil-less or oil-free and rated for O_2 service, unless they comply with the requirements of paragraph 5(e) below; and

(iii) Ensure that the compressor meets the requirements specified in paragraphs (i)(1) and (i)(2) of § 1910.430 whenever the highest O_2 fraction used in the mixing process exceeds 40%.

(e) Before employers produce nitrox breathing-gas mixtures using an oil-lubricated compressor to mix high-pressure air with O_2, and regardless of the gas pressure in any system component, they must:

(i) Use only uncontaminated air (*i.e.*, air containing no hydrocarbon particulates) for the nitrox breathing-gas mixture;

(ii) Have the compressor manufacturer certify in writing that the compressor is suitable for mixing the high-pressure air with the highest O_2 fraction used in the nitrox breathing-gas mixture;

(iii) Filter the high-pressure air to produce O_2-compatible air;

(iv) Have the filter-system manufacturer certify in writing that the filter system used for this purpose is suitable for producing O_2-compatible air; and

(v) Continuously monitor the air downstream from the filter for hydrocarbon contamination.

(f) Employers are to ensure that diving equipment using nitrox breathing-gas mixtures or pure O_2 under high pressure (*i.e.*, exceeding 125 psi) conforms to the O_2-service requirements specified in paragraphs (i)(1) and (i)(2) of § 1910.430.

6. Use of No-Decompression Limits

(a) For diving conducted while using nitrox breathing-gas mixtures, employers must ensure that each of their divers remains within the no-decompression limits specified for single and repetitive air diving and published in the 2001 NOAA Diving Manual or the report entitled ''Development and Validation of No-Stop Decompression Procedures for Recreational Diving: The DSAT Recreational Dive Planner,'' published in 1994 by Hamilton Research Ltd. (known commonly as the ''1994 DSAT No-Decompression Tables''). (See References (1) and (3) at the end of this appendix for complete information regarding these references.)

(b) Employers may permit their divers to use dive-decompression computers designed to regulate decompression when the dive-decompression computer uses the no-decompression limits specified above in paragraph 6(a), and provides output that reliably represents those limits.

7. Emergency Egress

(a) Regardless of the diving equipment used by divers (*i.e.*, open-circuit SCUBA or rebreathers), employers must ensure that the diving equipment consists of an open-circuit emergency-egress system (a ''bail-out'' system) in which the second stage of the regulator connects to a separate supply of emergency breathing gas, and the emergency breathing gas consists of air or the same nitrox breathing-gas mixture used during the dive.

(b) For open-circuit SCUBA, employers may use as an alternative to the ''bail-out'' system specified above under Condition (7)(a), the emergency-egress system (*i.e.*, the reserve breathing-gas supply) specified for open-circuit SCUBA by § 1910.424(c)(4)(i).

(c) Employers must ensure that the bail-out or alternative system performs reliably and provides sufficient emergency breathing gas to enable the diver to terminate the dive and return safely to the surface.

8. Treating Diving-Related Medical Emergencies

(a) Before each day's diving operations, employers must:

(i) Verify that a hospital, qualified health-care professionals, and the nearest Coast Guard Coordination Center (or an equivalent rescue service operated by a State, county, or municipal agency) are available to treat diving-related medical emergencies;

(ii) Ensure that each dive site has a means to alert these treatment resources in a timely manner when a diving-related medical emergency occurs; and

(iii) Ensure that transportation to a suitable decompression chamber is readily available when no decompression chamber is at the dive site, and that this transportation can deliver the injured diver to the decompression chamber within two (2) hours travel time from the dive site.

(b) Employers must ensure that portable O_2 equipment is available at the dive site to treat injured divers. In doing so, employers must ensure that:

(i) The equipment delivers medical-grade O_2 that meets the requirements for Medical USP oxygen (Type I, Quality Verification Level A) of CGA G–4.3–2000 (''Commodity Specification for Oxygen'');

(ii) The equipment delivers this O_2 to a transparent mask that covers the injured diver's nose and mouth; and

(iii) Sufficient O_2 is available for administration to the injured diver from the time the employer recognizes the symptoms of a diving-related medical emergency until the injured diver reaches a decompression chamber for treatment.

(c) Before each day's diving operations, employers must:

(i) Ensure that at least two attendants, either employees or non-employees, qualified in first-aid and administering O_2 treatment are available at the dive site to treat diving-related medical emergencies; and

(ii) Verify their qualifications for this task.

9. Diving Logs and Decompression Tables

(a) Before starting each day's diving operations, employers must:

(i) Designate an employee or a non-employee to make entries in a diving log; and

(ii) Verify that this designee understands the diving and medical terminology, and proper procedures, for making correct entries in the diving log.

(b) Employers are to:

(i) Ensure that the diving log conforms to the requirements specified by paragraph (d) (''Record of dive'') of § 1910.423; and

(ii) Keep a record of the dive in accordance with § 1910.440 (''Recordkeeping requirements'').

(c) Employers must ensure that a hard-copy of the decompression tables used for the dives (as specified above in paragraph 6(a)) is readily available at the dive site, whether or not your divers use dive-decompression computers.

10. Diver Training

Employers must ensure that their divers receive training that enables them to perform their work safely and effectively while using open-circuit SCUBAs or rebreathers supplied with nitrox breathing-gas mixtures. Accordingly, the divers must be able to demonstrate that they can perform critical tasks safely and effectively, including, but not limited to: Recognizing the effects of breathing excessive CO_2 and O_2; taking appropriate action after detecting excessive levels of CO_2 and O_2; and properly evaluating, operating, and maintaining their diving equipment under the diving conditions they encounter.

11. Testing Protocol for Determining the CO_2 Limits of Rebreather Canisters

(a) Employers must ensure that the rebreather manufacturer used the following procedures for determining that the CO_2-sorbent material meets the specifications of the material's manufacturer:

(i) The NATO CO_2 absorbent-activity test;

(ii) The RoTap shaker and nested sieves;

(iii) The Navy Experimental Diving Unit (''NEDU'')-derived Schlegel test; and

(iv) The NEDU's MeshFit software;

(b) Employers must ensure that the rebreather manufacturer applied the following canister-testing materials, methods, procedures, and statistical analyses:

(i) A nitrox breathing-gas mixture that has an O_2 fraction maintained at 0.28 (equivalent to 1.4 ATA of O_2 at 130 fsw, the maximum O_2 concentration permitted at this depth);

(ii) While operating the rebreather at a maximum depth of 130 fsw, used a breathing machine to continuously ventilate the rebreather with breathing gas that is at 100% humidity and warmed to a temperature of 98.6 degrees F (37 degrees C) in the heating-humidification chamber;

(iii) Measured the O_2 concentration of the inhalation breathing gas delivered to the mouthpiece;

(iv) Tested the canisters using the three ventilation rates listed in the following table (with the required breathing-machine tidal volumes and frequencies, and CO_2-injection rates, provided for each ventilation rate):

Ventilation rates (Lpm, ATPS [1])	Breathing machine tidal volumes (L)	Breathing machine frequencies (breaths per min.)	CO_2 injection rates (Lpm, STPD [2])
22.5	1.5	15	0.90
40.0	2.0	20	1.35
62.5	2.5	25	2.25

[1] ATPS means ambient temperature and pressure, saturated with water.

[2] STPD means standard temperature and pressure, dry; the standard temperature is 32 degrees F (0 degrees C).

(v) When using a work rate (*i.e.*, breathing-machine tidal volume and frequency) other than the work rates listed in the table above, added the appropriate combinations of ventilation rates and CO_2-injection rates;

(vi) Performed the CO_2 injection at a constant (steady) and continuous rate during each testing trial;

(vii) Determined canister duration using a minimum of four (4) water temperatures, including 40, 50, 70, and 90 degrees F (4.4, 10.0, 21.1, and 32.2 degrees C, respectively).

(viii) Monitored the breathing-gas temperature at the rebreather mouthpiece (at

the ''chrome T'' connector), and ensured that this temperature conforms to the temperature of a diver's exhaled breath at the water temperature and ventilation rate used during the testing trial; [9]

(ix) Implemented at least eight (8) testing trials for each combination of temperature and ventilation-CO_2-injection rates (*e.g.*, eight testing trials at 40 degrees F using a ventilation rate of 22.5 Lpm at a CO_2-injection rate of 0.90 Lpm);

(x) Allowed the water temperature to vary no more than ± 2.0 degrees F (± 1.0 degree C) *between* each of the eight testing trials, and no more than ± 1.0 degree F (± 0.5 degree C) *within* each testing trial;

(xi) Used the average temperature for each set of eight testing trials in the statistical analysis of the testing-trial results, with the testing-trial results being the time taken for the inhaled breathing gas to reach 0.005 ATA of CO_2 (*i.e.*, the canister-duration results);

(xii) Analyzed the canister-duration results using the repeated-measures statistics described in NEDU Report 2–99 (see Reference (4) at the end of this appendix for complete information regarding this reference);

(xiii) Specified the replacement schedule for the CO_2-sorbent materials in terms of the lower prediction line (or limit) of the 95% confidence interval; and

(xiv) Derived replacement schedules only by interpolating among, but not by extrapolating beyond, the depth, water temperatures, and exercise levels used during canister testing.

12. References

This section provides detailed information regarding the references cited in this appendix.

(1) National Oceanic and Atmospheric Administration (2001). NOAA Diving Manual: Diving for Science and Technology. Joiner, J. T. (ed.). Best Publishing Co., Flagstaff, AZ.

(2) Diving Science and Technology (1995). ''Analysis of Proposed Oxygen Exposure Limits for DSAT Oxygen Exposure Table Against Existing Database of Manned Oxygen Test Dives.'' Enriched Air Operations and Resource Guide. International PADI, Inc., Rancho Santa Margarita, California.

(3) R. W. Hamilton, R. E. Rogers, M. R. Powell, and R. D. Vann (1994). ''Development and Validation of No-Stop Decompression Procedures for Recreational Diving: The DSAT Recreational Dive Planner.'' Hamilton Research, Ltd., Tarrytown, New York.

(4) J. R. Clarke. ''Statistically Based CO_2 Canister Duration Limits for Closed-Circuit Underwater Breathing Apparatus.'' U.S. Navy Experimental Diving Unit, Report 2–99, 1999.

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[FR Doc. 03–372 Filed 1–9–03; 8:45 am]

BILLING CODE 4510–26–P

[9] NEDU can provide the manufacturer with information on the temperature of a diver's exhaled breath at various water temperatures and ventilation rates, as well as techniques and procedures used to maintain these temperatures during the testing trials.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 52 and 81

[IN148–1b; FRL–7436–3]

Redesignation and Approval and Promulgation of Indiana Implementation Plans

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: EPA is proposing to redesignate Lake County, Indiana, to attainment for particulate matter with a nominal aerodynamic diameter of 10 microns or less (PM_{10}). EPA also proposes to approve Indiana's plan for continuing to attain the PM_{10} standards.

DATES: Written comments on this proposed rule must arrive on or before February 10, 2003.

ADDRESSES: You should mail written comments to: J. Elmer Bortzer, Chief, Regulation Development Section, Air Programs Branch (AR–18J), U.S. Environmental Protection Agency, Region 5, 77 West Jackson Boulevard, Chicago, Illinois 60604.

You may inspect copies of Indiana's submittal at: Regulation Development Section, Air Programs Branch (AR–18J), U.S. Environmental Protection Agency, Region 5, 77 West Jackson Boulevard, Chicago, Illinois 60604.

FOR FURTHER INFORMATION CONTACT: John Summerhays, Regulation Development Section, Air Programs Branch (AR–18J), U.S. Environmental Protection Agency, Region 5, 77 West Jackson Boulevard, Chicago, Illinois 60604, *summerhays.john@epa.gov,* (312) 886–6067.

SUPPLEMENTARY INFORMATION: On September 25, 2002, Indiana requested that EPA redesignate Lake County from nonattainment to attainment for PM_{10}. The criteria for redesignations from nonattainment to attainment are in section 107(d)(3)(E) of the Clean Air Act. EPA proposes to conclude that (i) Lake County has attained the PM_{10} air quality standards, (ii) EPA has fully approved the applicable State Implementation Plan (SIP) under section 110(k) of the Act, (iii) the improvement in air quality in the area is due to permanent and enforceable emission reductions, (iv) the maintenance plan for the area satisfies section 175A of the Act, and (v) the state has met all requirements applicable to the area under section 110 and part D of the Act. Based on these findings, EPA proposes to approve Indiana's maintenance plan and redesignate Lake County, Indiana, to attainment for PM_{10}.

For additional information see the direct final rule published in the rules section of this **Federal Register**.

List of Subjects

40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovermental relations, Particulate matter, Reporting and recordkeeping requirements.

40 CFR Part 81

Air pollution control, National parks, Wilderness areas.

Authority: 42 U.S.C. 7401 et seq.

Dated: December 23, 2002.

David A. Ullrich,

Acting Regional Administrator, Region 5.

[FR Doc. 03–283 Filed 1–9–03; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 229

[021213308–2308–01, 111802B]

RIN 0648–AQ60

List of Fisheries for 2003

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice of proposed rulemaking.

SUMMARY: The National Marine Fisheries Service (NMFS) proposes changes for 2003 to the List of Fisheries (LOF) as required by the Marine Mammal Protection Act (MMPA). The proposed LOF for 2003 reflects new information on interactions between commercial fisheries and marine mammals. Under the MMPA, NMFS must place each commercial fishery on the LOF into one of three categories based upon the level of serious injury and mortality of marine mammals that occurs incidental to that fishery. The categorization of a fishery in the LOF determines whether participants in that fishery are subject to certain provisions of the MMPA, such as registration, observer coverage, and take reduction plan requirements.

DATES: Comments must be received by February 10, 2003.

ADDRESSES: Send comments to Chief, Marine Mammal Conservation Division,