

## DEPARTMENT OF HOMELAND SECURITY

### Coast Guard

46 CFR Parts 25, 27, 28, 31, 34, 35, 62, 71, 76, 78, 91, 95, 97, 107, 108, 112, 115, 118, 119, 122, 131, 132, 147, 162, 167, 169, 176, 181, 182, 185, 189, 190, 193, 194, and 196

[USCG–2006–24797]

RIN 1625–AB44

### Carbon Dioxide Fire Suppression Systems on Commercial Vessels

AGENCY: Coast Guard, DHS.

ACTION: Notice of proposed rulemaking.

**SUMMARY:** The Coast Guard proposes to amend the current regulations for fire suppression systems on several classes of commercial vessels. The amendments would clarify that approved alternatives to carbon dioxide systems may be used to protect some spaces on these vessels and would set general requirements for alternative systems.

Additionally, new and existing carbon dioxide systems, when used in spaces that can be accessed by persons onboard the specified commercial vessels, would need to be equipped with lockout valves and olfactory additives to protect persons in the event of a carbon dioxide discharge. By requiring these features on carbon dioxide systems and by making a wider range of fire suppression systems available, the proposed regulations advance the Coast Guard's mission of promoting maritime safety and mobility.

**DATES:** Comments and related material must either be submitted to our online docket via <http://www.regulations.gov> on or before May 25, 2010 or reach the Docket Management Facility by that date.

**ADDRESSES:** You may submit comments identified by docket number USCG–2006–24797 using any one of the following methods:

(1) *Federal eRulemaking Portal:* <http://www.regulations.gov>.

(2) *Fax:* 202–493–2251.

(3) *Mail:* Docket Management Facility (M–30), U.S. Department of Transportation, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue, SE., Washington, DC 20590–0001.

(4) *Hand delivery:* Same as mail address above, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The telephone number is 202–366–9329.

To avoid duplication, please use only one of these four methods. See the

“Public Participation and Request for Comments” portion of the **SUPPLEMENTARY INFORMATION** section below for instructions on submitting comments.

*Viewing incorporation by reference material:* You may inspect the material proposed for incorporation by reference at room 1308, U.S. Coast Guard Headquarters, 2100 2nd Street, SW., Stop 7126, Washington, DC 20593–7126 between 9 a.m. and 3 p.m., Monday through Friday, except Federal holidays. The telephone number is 202–372–1356. Copies of the material are available as indicated in the “Incorporation by Reference” section of this preamble.

**FOR FURTHER INFORMATION CONTACT:** If you have questions on this proposed rule, call or e-mail Lieutenant Commander Suzanne Hemann, U.S. Coast Guard; telephone 202–372–1356, e-mail [Suzanne.E.Hemann@uscg.mil](mailto:Suzanne.E.Hemann@uscg.mil). If you have questions on viewing or submitting material to the docket, call Renee V. Wright, Program Manager, Docket Operations, telephone 202–366–9826.

#### SUPPLEMENTARY INFORMATION:

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#### I. Public Participation and Request for Comments

We encourage you to participate in this rulemaking by submitting comments and related materials. All comments received will be posted without change to <http://www.regulations.gov> and will include any personal information you have provided.

##### A. Submitting Comments

If you submit a comment, please include the docket number for this

rulemaking (USCG–2006–24797), indicate the specific section of this document to which each comment applies, and provide a reason for each suggestion or recommendation. You may submit your comments and material online or by fax, mail, or hand delivery, but please use only one of these means. We recommend that you include your name and a mailing address, an e-mail address, or a phone number in the body of your document so that we can contact you if we have questions regarding your submission.

To submit your comment online, go to <http://www.regulations.gov>, select the Advanced Docket Search option on the right side of the screen, insert “USCG–2006–24797” in the Docket ID box, press Enter, and then click on the balloon shape in the Actions column. If you submit your comments by mail or hand delivery, submit them in an unbound format, no larger than 8½ by 11 inches, suitable for copying and electronic filing. If you submit comments by mail and would like to know that they reached the Facility, please enclose a stamped, self-addressed postcard or envelope. We will consider all comments and material received during the comment period and may change this proposed rule based on your comments.

##### B. Viewing Comments and Documents

To view comments, as well as documents mentioned in this preamble as being available in the docket, go to <http://www.regulations.gov>, select the Advanced Docket Search option on the right side of the screen, insert “USCG–2006–24797” in the Docket ID box, press Enter, and then click on the item in the Docket ID column. If you do not have access to the Internet, you may view the docket online by visiting the Docket Management Facility in Room W12–140 on the ground floor of the Department of Transportation West Building, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. We have an agreement with the Department of Transportation to use the Docket Management Facility.

##### C. Privacy Act

Anyone can search the electronic form of comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review a Privacy Act notice regarding our public dockets in the January 17, 2008 issue of the **Federal Register** (73 FR 3316).

**D. Public Meeting**

We do not now plan to hold a public meeting. But you may submit a request for one to the docket using one of the methods specified under **ADDRESSES**. In your request, explain why you believe a public meeting would be beneficial. If we determine that one would aid this rulemaking, we will hold one at a time and place announced by a later notice in the **Federal Register**.

**II. Abbreviations**

CO <sub>2</sub>	Carbon dioxide
DHS	Department of Homeland Security
FK-5-1-12	Dodecafluoro-2-methylpentan-3-one
FR	<b>Federal Register</b>
HFC-227ea	Heptafluoropropane
IG-541	Nitrogen 52%, argon 40%, and carbon dioxide 8%
MODUs	Mobile offshore drilling units
U.S.C.	United States Code

**III. Background**

Until recently, carbon dioxide (CO<sub>2</sub>) systems were the only systems suitable for suppressing or extinguishing fires in certain vessel spaces, such as those used for cargo and various types of machinery. Our current regulations require the use of CO<sub>2</sub> systems in such spaces on towing vessels, tank vessels, cargo and miscellaneous vessels, mobile offshore drilling units (MODUs), offshore supply vessels, public nautical school ships, and large passenger vessels (“Subchapter H” vessels). We also allow carbon dioxide systems on small passenger vessels carrying more than 150 passengers or with overnight accommodations for more than 49 passengers (“Subchapter K” vessels) and other small passenger vessels (“Subchapter T” vessels).

Carbon dioxide systems work by flooding a protected space with CO<sub>2</sub>, thereby depriving a fire of the oxygen it needs to burn. Unfortunately, when a carbon dioxide discharge occurs, oxygen deprivation poses a risk to persons who may be in this protected space. Crew members have died when odorless CO<sub>2</sub> gas was discharged in their spaces

accidentally or without adequate warning to evacuate.

In recent years, alternative systems have been developed that are comparable to carbon dioxide systems in their ability to suppress fires, but that do not pose the same risks to persons onboard. Our regulations currently allow for the use of Coast Guard-approved alternative systems. At present, most approved systems use halocarbon clean agents HFC-227ea (heptafluoropropane), FK-5-1-12 (dodecafluoro-2-methylpentan-3-one), or IG-541 (nitrogen 52%, argon 40%, and carbon dioxide 8%). We have also approved water mist systems for some applications. These systems have been tested by independent testing laboratories and have laboratory listings. Systems using other agents may be developed and approved in the future.

Along with the manufacturers of alternative systems, shipyards, and independent testing laboratories, we believe it would promote safety and be advantageous to industry to issue new regulations for installing, maintaining, and using approved carbon dioxide-alternative fire suppression systems.

**IV. Discussion of Proposed Rule**

We are proposing two overall changes to our regulations.

*1. Lockout valves and olfactory additives.*

We propose requiring lockout valves and olfactory additives in any CO<sub>2</sub> system used in a space that may be occupied by persons onboard, even if only occasionally.

Lockout valves, which are already required for shore-based facilities by National Fire Protection Association standards (NFPA 12, 2008 edition), are intended to be used during system maintenance to prevent inadvertent flooding of a protected space. We would require lockout valves on vessels that use CO<sub>2</sub> systems in spaces containing more than 6,000 cubic feet and in smaller spaces that do not have horizontal escapes, which provide a quick way to evacuate. Odorizer units

would be required for CO<sub>2</sub> systems of any size to provide a scent to normally odorless CO<sub>2</sub> during discharge. A distinctive-smelling substance, like wintergreen, is added to the CO<sub>2</sub> so that in the event of a CO<sub>2</sub> discharge in a vessel’s space, any persons in that space can quickly smell the discharge and evacuate.

Additionally, the odor would warn persons in adjacent spaces that the CO<sub>2</sub> may have migrated. The new lockout valve and olfactory additive requirements would apply immediately to new systems. They would be phased-in for existing systems, allowing the necessary simple retrofits to be made during drydocking or routine maintenance, thereby reducing the financial impact on vessel owners. Retrofitting would involve dismantling and reassembling a small section of system piping to include a lockout valve.

*2. Alternative systems.*

The second overall change we propose is to amend our existing regulations to make it clear that alternative systems using clean agent and inert gases may be used. Furthermore, we are proposing clarifications to the general requirements for maintaining, installing, and using an alternative system. System layout and control requirements would be based on the current regulations for engineered CO<sub>2</sub> systems on inspected vessels. Independent laboratories would oversee prototype testing and follow-up quality control supervision.

The following table lists the parts within 46 CFR that are affected by our proposal and the specific sections we propose to amend. The foregoing discussion provides a general explanation for each of these changes. When additional information is required, it appears in the table in parentheses. The table omits any discussion of numerous minor and nonsubstantive style, format, or wording changes that we are proposing solely to improve the clarity of our regulations.

**TABLE 1—PROPOSED CHANGES TO 46 CFR**

46 CFR part and topic	46 CFR sections affected (& comments)
25—Uninspected vessels .....	25.30–15 (remove paragraph designations and remove redundant second paragraph).
27—Towing vessels .....	27.101.
28—Commercial fishing industry vessels.	28.825.
31, 34, 35—Tank vessels .....	31.10–18 (remove flow test requirement in para. (f)), 34.01–15 (incorporation by reference), 34.05–5, 34.15–50 (new), 34.15–60 (new), 35.40–7, 35.40–8 (new), 35.40–10.
62—Marine engineering, vital systems automation.	62.25–20.
71, 76, 78—Subchapter H passenger vessels (≥ 100 gross tons).	71.20–20, 71.25–20, 71.65–5, 76.05–1, 76.10–5, 76.15–50 (new), 76.16–60 (new), 78.47–9, 78–47.11 (new), 78.47–17.

TABLE 1—PROPOSED CHANGES TO 46 CFR—Continued

46 CFR part and topic	46 CFR sections affected (& comments)
91, 95, 97—Cargo & miscellaneous vessels.	91.20–20, 91.25–20, 91.55–5, 95.01–2 (incorporation by reference), 95.05–10, 95.10–5, 95.15–5 (lengthen discharge time from 2 to 10 min. for spaces specially suitable for vehicles to provide greater safety margin and meet the International Maritime Organization’s Safety of Life at Sea (SOLAS) requirements), 95.15–30 (provide for nitrogen pilot cylinders), 95.15–50 (new), 95.15–60 (new), 95.16–1–95.16–90 (new; based on current subpart 95.15, modified and reorganized), 97.37–9, 97.37–11 (new), 97.37–13.
107, 108—Mobile offshore drilling units	107.231, 107.235, 108.444 (new), 108.446 (new), 108.626 (new), 108.627, 108.631.
112—Electrical engineering, emergency lighting & power systems.	112.15–5.
115, 118, 119, 122—Subchapter K passenger vessels (< 100 gross tons & > 150 passengers or > 49 overnight passengers).	115.810, 118.410, 119.710, 122.612.
131, 132—Offshore supply vessels .....	131.815, 131.817 (new), 131.825, 132.350.
147—Hazardous ships’ stores .....	147.7 (incorporation by reference), 147.45 (nonsubstantive change), 147.60 (nonsubstantive change), 147.66 (new), 147.67 (new).
162—Engineering equipment .....	162.161–1–162.161–9 (new).
167—Public nautical school ships .....	167.45–1, 167.45–45, 167.55–5.
169—Sailing school vessels .....	169.247, 169.564, 169.570 (new), 169.571 (new), 169.732, 169.734.
176, 181, 182, 185—Subchapter T passenger vessels (< 100 gross tons & ≤ 150 passengers or ≤ 49 passengers overnight).	176.810, 181.410, 182.710, 185.612.
189, 190, 193, 194, 196—Oceanographic research vessels.	189.25–20, 189.55–5, 190.15–5, 193.05–10, 193.10–5, 193.15–16 (new), 193.15–17 (new), 193.15–50 (new), 194.20–7, 196.37–8 (new), 196.37–9, 196.37–13.

**V. Incorporation by Reference**

Material proposed for incorporation by reference appears in 46 CFR 34.01–15, 46 CFR 147.7, and 46 CFR 162.161–2. You may inspect this material at U.S. Coast Guard Headquarters where indicated under **ADDRESSES**. Copies of the material are available from the sources listed in 46 CFR 34.01–15, 46 CFR 147.7, and 46 CFR 162.161–2.

Before publishing a binding rule, we will submit this material to the Director of the Federal Register for approval of the incorporation by reference.

**VI. Regulatory Analysis**

We developed this proposed rule after considering numerous statutes and executive orders related to rulemaking. Below we summarize our analyses based on 13 of these statutes or executive orders.

*A. Regulatory Planning and Review*

This proposed rule is not a significant regulatory action under section 3(f) of Executive Order 12866, Regulatory Planning and Review, and does not require an assessment of potential costs and benefits under section 6(a)(3) of that Order. The Office of Management and Budget (OMB) has not reviewed it under that Order.

A draft Regulatory Analysis is available in the docket where indicated under the “Public Participation and Request for Comments” section of this preamble. A summary of the preliminary Regulatory Analysis follows.

We propose to amend the current regulations for carbon dioxide fire suppression systems on commercial vessels. The amendments would require certain safety requirements for current and future users of CO<sub>2</sub> systems. The proposed rule would require lockout valves for certain protected spaces as well as for an olfactory additive as a warning measure for all CO<sub>2</sub> systems. The proposed rule would also clarify what approved alternatives to CO<sub>2</sub> systems may be used to protect some spaces on these vessels and would set general requirements for alternative systems. We do not expect industry would incur additional costs as a result of the provisions for alternative systems. See below for additional discussion of alternative systems.

Carbon dioxide fire suppression systems pose a risk of asphyxiation to personnel. Lockout valves and olfactory additives help protect persons in the event of an inadvertent release during maintenance. Olfactory additives offer additional protection from leaks from a protected space to adjacent spaces and help alert personnel when CO<sub>2</sub> has been released. By requiring these features on carbon dioxide systems and making a wider range of fire suppression systems available, the proposed amendments would advance the Coast Guard’s missions of promoting maritime safety and mobility.

U.S. flag vessel owners are expected to incur costs associated with this proposed rule. Vessel owners with existing CO<sub>2</sub> fire suppression systems

would be required to add the lockout valves and olfactory units within five years of the publication of the final rule. This would allow enough time for vessel owners to add these features during scheduled vessel maintenance periods and would reduce the cost of compliance for vessel owners. For purposes of this regulatory assessment, we assume an equal proportion of systems will be retrofitted each year for five years. New vessel owners will incur the costs as systems are incorporated into new ships at construction.

**Affected Population**

Vessels with CO<sub>2</sub> fire suppression systems that are not in compliance with the proposed regulation would be required to install lockout valves at entrances to all spaces greater than 6,000 cubic feet in volume where personnel may enter, as well as, in spaces with 6,000 cubic feet in volume or less that do not have a horizontal escape for quick escape. Vessels equipped with existing CO<sub>2</sub> fire suppression systems would incur a cost for retrofitting valves to the systems. Newly constructed vessels installing new fire CO<sub>2</sub> suppression systems in similar spaces would also incur a cost for installation of lockout valves, although at a lower cost than retrofitting systems on existing vessels because installations during vessel construction are typically less costly.

Based on Coast Guard Marine Investigation Security and Law Enforcement (MISLE) data, we estimate

there are potentially 1,702 existing vessels with a total of 3,204 CO<sub>2</sub> fire suppression systems that would require lockout valves. The 3,204 existing systems consist of 1,054 larger systems that would require more expensive lockout valves and 2,150 smaller systems that would require less expensive lockout valves. Using MILSE data, we estimate there are potentially 22 small systems and 12 large systems installed each year on new vessels, which would be required to have lockout valves.

The population of affected vessels that would need to install olfactory additives (odorizers) includes all existing and new vessels with CO<sub>2</sub> systems. All existing vessels with CO<sub>2</sub> systems would require a retrofit for each protected space. Based on MISLE data, we estimate there are potentially 7,815 systems on 3,567 vessels that would be required to install odorizers.<sup>1</sup> Each new vessel with CO<sub>2</sub> systems would also require an odorizer for compartments of all sizes. Of the new vessels constructed annually, we estimate the 46 new systems/year installed would require odorizers.

**Costs**

Based on industry data, we estimate that average 2008 industry prices for installed retrofit large and small lockout valves are \$3,513 and \$1,475, respectively. Systems that handle more than 2,450 pounds of CO<sub>2</sub> require a valve larger than 2 inches. Of the 3,204 existing systems affected by this proposed rule, 1,054 would require the larger, more expensive lockout valves, while 2,150 systems require the smaller valves for a total undiscounted cost of about \$6,873,425. The annual undiscounted cost for owners of vessels with existing systems to meet the lockout valve requirement of this proposed rule would be approximately \$1,374,685 for each year of the five-year phase-in period.

Vessel owners wishing to install a new CO<sub>2</sub> fire suppression system would be required to have the lockout valves included in the installation. We estimate that the annual undiscounted industry cost for adding lockout valves to new CO<sub>2</sub> fire suppression systems to be \$65,932 per year (based on installed costs on new systems of \$1,258 for small valves and \$3,188 for large valves).

Industry would incur this cost for each year over the ten-year period of analysis.

As for odorizers, we estimate that the retrofit installed costs, including three warning signs, are \$551/unit based on industry information. This is about \$35 more than the estimated cost for new odorizers installed. With a five-year phase-in for all 7,815 systems, 1,563 systems will be retrofitted on average each year. We estimate the total annual undiscounted cost of the retrofit will be \$861,213. For new systems using the lockout valve, we estimate the total annual undiscounted cost to be about \$17,558 for all 34 protected areas. For the remaining systems not required to have a lockout valve, the cost for installing odorizers in 12 areas will be about \$6,197. The total cost per vessel would be dependent on the number of areas protected by CO<sub>2</sub>.

We estimated the total cost of this rulemaking over a ten-year period to be \$12.1 million (see Table 2). For the first five years, we estimated the undiscounted costs to be \$2,325,584/year for both retrofits and new installations.

**TABLE 2—TOTAL COST OF ADDING LOCKOUT VALVES AND ODORIZERS TO CO<sub>2</sub> SYSTEMS**

Year	Lockout valves	Odorizers	Total	Total 7% discount	Total 3% discount
2011	\$1,440,617	\$884,967	\$2,325,584	\$2,173,443	\$2,257,849
2012	1,440,617	884,967	2,325,584	2,031,255	2,192,086
2013	1,440,617	884,967	2,325,584	1,898,370	2,128,239
2014	1,440,617	884,967	2,325,584	1,774,177	2,066,252
2015	1,440,617	884,967	2,325,584	1,658,110	2,006,070
2016	65,932	23,754	89,686	59,762	75,111
2017	65,932	23,754	89,686	55,582	72,923
2018	65,932	23,754	89,686	52,198	70,799
2019	65,932	23,754	89,686	48,783	68,737
2020	65,932	23,754	89,686	45,592	66,735
<b>Total</b>	<b>7,532,745</b>	<b>4,543,609</b>	<b>12,076,354</b>	<b>9,797,543</b>	<b>11,004,801</b>
<b>Annualized Costs</b>				<b>1,394,950</b>	<b>1,290,198</b>

Source: USCG Calculations.

**Note:** Totals may not add due to rounding.

For the remaining years, the undiscounted costs are \$89,686/year due to the new installations only. We discounted the annual costs at 3 percent and 7 percent and also annualized the total costs at the same rates. The total 10-year cost of the proposed rule is \$9.8 million at a 7 percent discount rate and \$11 million at 3 percent.

This proposed regulation would clarify Coast Guard acceptance of alternatives to using CO<sub>2</sub> systems. We do not believe that these provisions would have a cost impact because the

Coast Guard has been approving alternative systems on an ad hoc basis. We believe these approved installed alternative systems would be compliant with the requirements for alternative systems proposed in this rulemaking.

With regard to alternative fire suppression systems, the use of halocarbon (only one of a number of alternatives) fire suppression systems has been increasing in recent years (2006–2008). Our records indicate that industry installed an average of 21 halocarbon fire suppression systems

compared to an average of 34 CO<sub>2</sub> fire suppression systems with capacity over 6,000 cubic feet during this period.

**Benefits**

The primary benefit associated with this proposed rule is the reduction in risk of injuries and fatalities related to CO<sub>2</sub> exposure. CO<sub>2</sub> exposure has long been recognized as a potential hazard to human health. The National Institute of Occupational Safety and Health (NIOSH), in its publication NIOSH 76–194, “Criteria for a Recommended

<sup>1</sup> The difference in the vessel populations and system counts (lockout valve vs. odorizers) is

reflective of the large number of extremely small sized systems that need odorizers, but do not need

lockout valves (the balance of 7,815 – 3,204 or 4,611).

Standard—Occupational Exposure to Carbon Dioxide,” available at <http://www.cdc.gov/niosh/76-194.html>, has set criteria for a standard for limits of exposure to CO<sub>2</sub> in workplace settings.

Other Federal and industry agencies and associations have also recently concluded that CO<sub>2</sub> fire suppression systems could pose a risk. For example, the National Fire Prevention Association (NFPA) guidance in its 2005 Edition for CO<sub>2</sub> fire suppression systems located on land states that “total flooding CO<sub>2</sub> suppression systems shall not be used in normally occupied enclosures”. In addition, the EPA, in its 2000 report, “Carbon Dioxide as a Fire Suppressant: Examining the Risk,” has suggested that clarifying maritime regulation would be beneficial to reducing accidental exposure.

The Regulatory Analysis available in the docket has additional detail on the assessment of the benefits and costs of this rulemaking. The assessment also contains details and analysis of the alternatives considered for this rulemaking.

#### B. Small Entities

Under the Regulatory Flexibility Act (5 U.S.C. 601–612), we have considered whether this proposed rule would have a significant economic impact on a substantial number of small entities. The term “small entities” comprises small businesses, not-for-profit organizations that are independently owned and operated as well as not being dominant in their fields, and governmental jurisdictions with populations of less than 50,000.

A combined Regulatory Assessment and Initial Regulatory Flexibility Analysis discussing the impact of this proposed rule on small entities is available in the docket where indicated under the “Public Participation and Request for Comments” section of this preamble.

Our data shows that there are 489 known entities that owned vessels with CO<sub>2</sub> fire suppression systems onboard in 2008. Of the 489, 26 are government entities with populations of more than 50,000 that we excluded from the small business analysis. Of the remaining 463 entities, we were able to find revenue and employment information for 100 entities. Of the 100, we confirmed that 37 were small as defined by Small Business Administration (SBA) size standards.

We assumed the remaining 363 entities to be small because we were unable to find revenue or employment information. Given that assumption of size, we concluded that small entities

likely comprise 400 (363 + 37) or 81.8% of the total affected population.

Of the small entities with revenue and employee size data, we determined that 83.8% would have an annual revenue impact of less than 1 percent. Further, we estimated that the impact on 97.3% of these small entities would be less than 3% of annual revenue.

Therefore, the Coast Guard certifies under 5 U.S.C. § 605(b) that this rulemaking would not have a significant economic impact on a substantial number of small entities. We are interested in the potential impacts from this proposed rule on small businesses and we request public comment on these potential impacts. If you think that your business, organization, or governmental jurisdiction qualifies as a small entity and that this rulemaking would have a significant economic impact on it, please submit a comment to the Docket Management Facility at the address under the “Public Participation and Request for Comments” section of this preamble. In your comment, explain why, how, and to what degree you think this rule would have an economic impact on you.

#### C. Assistance for Small Entities

Under section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121), we want to assist small entities in understanding the proposed rule so that they can better evaluate its effects on them and participate in the rulemaking. If the rule affects your small business, organization, or governmental jurisdiction and you have questions concerning its provisions or options for compliance, please call Lieutenant Commander Suzanne Hemann, CG–5214, U.S. Coast Guard, telephone 202–372–1356 or send her an e-mail at [suzanne.e.hemann@uscg.mil](mailto:suzanne.e.hemann@uscg.mil). The Coast Guard will not retaliate against small entities that question or complain about this rule or any policy or action of the Coast Guard.

Small businesses may send comments on the actions of Federal employees who enforce, or otherwise determine compliance with, Federal regulations to the Small Business and Agriculture Regulatory Enforcement Ombudsman and the Regional Small Business Regulatory Fairness Boards. The Ombudsman evaluates these actions annually and rates each agency’s responsiveness to small business. If you wish to comment on actions by employees of the Coast Guard, call 1–888–REG–FAIR (1–888–734–3247).

#### D. Collection of Information

This proposed rule would require no new collection of information (COI) under the Paperwork Reduction Act (44 U.S.C. 3501–3520). The U.S. Coast Guard has been approving alternatives to CO<sub>2</sub> systems for a number of years and accounting for it in COI document “OMB Control Number 1625–0035”. This rulemaking would not require any new recordkeeping or reporting requirements. Satisfactory lockout valve and olfactory installation will be confirmed by normal future Coast Guard inspections.

#### E. Federalism

A rule has implications for federalism under Executive Order 13132, Federalism, if it has a substantial direct effect on State or local governments and would either preempt State law or impose a substantial direct cost of compliance on them. We have analyzed this proposed rule under that Order and have determined that it does not have implications for federalism.

#### F. Unfunded Mandates Reform Act

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

#### G. Taking of Private Property

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

#### H. Civil Justice Reform

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

#### I. Protection of Children

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

safety that might disproportionately affect children.

#### *J. Indian Tribal Governments*

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

#### *K. Energy Effects*

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

#### *L. Technical Standards*

The National Technology Transfer and Advancement Act (NTTAA) (15 U.S.C. 272 note) directs agencies to use voluntary consensus standards in their regulatory activities unless the agency provides Congress, through the Office of Management and Budget, with an explanation of why using these standards would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g. specifications of materials, performance, design, or operation; test methods; sampling procedures; and related management systems practices) that are developed or adopted by voluntary consensus standard bodies.

This proposed rule uses the following consensus standards: Underwriters Laboratories (UL) standards UL 2127 entitled “Standard for Inert Gas Clean Agent Extinguishing System Units,” UL 2166 entitled “Standard for Halocarbon Clean Agent Extinguishing System Units,” and National Fire Protection Association (NFPA) 2001 entitled “Standard on Clean Agent Fire Extinguishing Systems.” The proposed sections that reference these standards and the locations where these standards are available are listed in the proposed

regulatory text for 46 CFR 34.01–15, 147.7, and 162.161–2.

This proposed rule also uses technical standards other than voluntary consensus standards. The test described in the regulatory text proposed for 46 CFR 162.161–6 is in accordance with requirements of the International Maritime Organization, IMO MSC/Circ.848 entitled “Revised Guidelines for the Approval of Equivalent Fixed Gas Fire-Extinguishing Systems, as referred to in chapter II–2 of SOLAS 74, for machinery spaces and cargo pump-rooms” and IMO MSC.1/Circ. 1267 entitled “Amendments to the Revised Guidelines for the Approval of Equivalent Fixed Gas Fire-Extinguishing Systems, as referred to in chapter II–2 of SOLAS 74, for machinery spaces and cargo pump-rooms (MSC/Circ. 848)”. The remaining requirements and tests were developed by the Coast Guard and used to evaluate currently-approved carbon dioxide-alternative fire suppression systems. These requirements are described throughout the proposed regulations. They are used because we did not find voluntary consensus standards that are applicable to this rule. If you disagree with our analysis of the voluntary consensus standards listed above or are aware of voluntary consensus standards that might apply, but are not listed, please send a comment to the docket using one of the methods under **ADDRESSES**. In your comment, please explain why you disagree with our analysis and/or identify voluntary consensus standards we have not listed that might apply.

#### *M. Environment*

We have analyzed this proposed rule under Department of Homeland Security Management Directive 023–01 and Commandant Instruction M16475.ID, which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321–4370f), and have made a preliminary determination that this action is one of a category of actions which do not individually or cumulatively have a significant effect on the human environment. A preliminary environmental analysis checklist supporting this determination is available in the docket where indicated under the “Public Participation and Request for Comments” section of this preamble. This rule involves amending the current regulations for carbon dioxide fire suppression systems on several classes of commercial vessels. Exclusion under paragraphs (34)(d) of Figure 2.1 of the Instruction and section 6(a) of the **Federal Register**, Vol. 67, No. 141, Tuesday July 23, 2002, page 48243

apply because this rule pertains to regulations concerning the equipping of vessels, as well as equipment approval. We seek any comments or information that may lead to the discovery of a significant environmental impact from this proposed rule.

#### **List of Subjects**

##### *46 CFR Part 25*

Fire prevention, Marine safety, Reporting and recordkeeping requirements.

##### *46 CFR Part 27*

Fire prevention, Incorporation by reference, Marine safety, Reporting and recordkeeping requirements, Vessels.

##### *46 CFR Part 28*

Alaska, Fire prevention, Fishing vessels, Marine safety, Occupational safety and health, Reporting and recordkeeping requirements, Seamen.

##### *46 CFR Part 31*

Cargo vessels, Marine safety, Reporting and recordkeeping requirements.

##### *46 CFR Part 34*

Cargo vessels, Fire prevention, Marine safety.

##### *46 CFR Part 35*

Cargo vessels, Marine safety, Navigation (water), Occupational safety and health, Reporting and recordkeeping requirements, Seamen.

##### *46 CFR Part 62*

Reporting and recordkeeping requirements, Vessels.

##### *46 CFR Part 71*

Marine safety, Passenger vessels, Reporting and recordkeeping requirements.

##### *46 CFR Part 76*

Fire prevention, Marine safety, Passenger vessels.

##### *46 CFR Part 78*

Marine safety, Navigation (water), Passenger vessels, Penalties, Reporting and recordkeeping requirements.

##### *46 CFR Part 91*

Cargo vessels, Marine safety, Reporting and recordkeeping requirements.

##### *46 CFR Part 95*

Cargo vessels, Fire prevention, Incorporation by reference, Marine safety.

**46 CFR Part 97**

Cargo vessels, Marine safety, Navigation (water), Reporting and recordkeeping requirements.

**46 CFR Part 107**

Marine safety, Oil and gas exploration, Reporting and recordkeeping requirements, Vessels.

**46 CFR Part 108**

Fire prevention, Marine safety, Occupational safety and health, Oil and gas exploration, Vessels.

**46 CFR Part 112**

Vessels.

**46 CFR Part 115**

Fire prevention, Marine safety, Passenger vessels, Reporting and recordkeeping requirements.

**46 CFR Part 118**

Fire prevention, Marine safety, Passenger vessels.

**46 CFR Part 119**

Marine safety, Passenger vessels.

**46 CFR Part 122**

Marine safety, Passenger vessels, Penalties, Reporting and recordkeeping requirements.

**46 CFR Part 131**

Cargo vessels, Fire prevention, Marine safety, Navigation (water), Occupational safety and health, Reporting and recordkeeping requirements.

**46 CFR Part 132**

Cargo vessels, Fire prevention, Marine safety, Reporting and recordkeeping requirements.

**46 CFR Part 147**

Hazardous materials transportation, Incorporation by reference, Labeling, Marine safety, Packaging and containers, Reporting and recordkeeping requirements.

**46 CFR Part 162**

Fire prevention, Incorporation by reference, Marine safety, Oil pollution, Reporting and recordkeeping requirements.

**46 CFR Part 167**

Fire prevention, Marine safety, Reporting and recordkeeping requirements, Schools, Seamen, Vessels.

**46 CFR Part 169**

Fire prevention, Marine safety, Reporting and recordkeeping requirements, Schools, Vessels.

**46 CFR Part 176**

Fire prevention, Marine safety, Passenger vessels, Reporting and recordkeeping requirements.

**46 CFR Part 181**

Fire prevention, Marine safety, Passenger vessels.

**46 CFR Part 182**

Marine safety, Passenger vessels.

**46 CFR Part 185**

Marine safety, Passenger vessels, Reporting and recordkeeping requirements.

**46 CFR Part 189**

Marine safety, Oceanographic research vessels, Reporting and recordkeeping requirements.

**46 CFR Part 190**

Fire prevention, Marine safety, Occupational safety and health, Oceanographic research vessels.

**46 CFR Part 193**

Fire prevention, Marine safety, Oceanographic research vessels.

**46 CFR Part 194**

Explosives, Hazardous materials transportation, Marine safety, Oceanographic research vessels.

**46 CFR Part 196**

Marine safety, Oceanographic research vessels, Reporting and recordkeeping requirements.

For the reasons listed in the preamble, the Coast Guard proposes to amend 46 CFR parts 25, 27, 28, 31, 34, 35, 62, 71, 76, 78, 91, 95, 97, 107, 108, 112, 115, 118, 119, 122, 131, 132, 147, 162, 167, 169, 176, 181, 182, 185, 189, 190, 193, 194, and 196 as follows:

**PART 25—REQUIREMENTS**

1. The authority citation for Part 25 continues to read as follows:

**Authority:** 33 U.S.C. 1903(b); 46 U.S.C. 3306, 4102, 4302; Department of Homeland Security Delegation No. 0170.1.

2. Revise § 25.30–15 to read as follows:

**§ 25.30–15 Fixed fire-extinguishing systems.**

When a fixed fire-extinguishing system is installed, it must be a type approved or accepted by the Commandant (CG–5214) or the Commanding Officer, U.S. Coast Guard Marine Safety Center.

**PART 27—TOWING VESSELS**

3. The authority citation for Part 27 continues to read as follows:

**Authority:** 46 U.S.C. 3306, 4102 (as amended by Pub. L. 104–324, 110 Stat. 3901); Department of Homeland Security Delegation No. 0170.1.

4. In § 27.101, in the definition of “Fixed fire-extinguishing system”, revise paragraphs (1) and (3), and add a new paragraph (4), to read as follows:

**§ 27.101 Definitions.**

\* \* \* \* \*

*Fixed fire-extinguishing system* means:

(1) A carbon dioxide system that satisfies 46 CFR 76.15 and the system labeling requirements in 46 CFR 78.47–7 and 78.47–11 and that is approved by the Commandant;

\* \* \* \* \*

(3) A manually-operated water-mist system that satisfies NFPA 750 (incorporated by reference; see 46 CFR 27.102) and that is approved by the Commandant; or

(4) A clean agent system that satisfies 46 CFR 95.16 and the labeling requirements of 46 CFR 97.37–9 and 97.37–11 and that is approved by the Commandant.

\* \* \* \* \*

**PART 28—REQUIREMENTS FOR COMMERCIAL FISHING INDUSTRY VESSELS**

5. The authority citation for Part 28 continues to read as follows:

**Authority:** 46 U.S.C. 3316, 4502, 4505, 4506, 6104, 10603; Department of Homeland Security Delegation No. 0170.1.

6. Revise § 28.825(b)(2)(iv) to read as follows:

**§ 28.825 Excess fire detection and protection equipment.**

\* \* \* \* \*

(b) \* \* \*

(2) \* \* \*

(iv) The control cabinets or spaces containing valves or manifolds for the various fire extinguishing systems must be distinctly marked in conspicuous red letters at least 2 inches high: “[CARBON DIOXIDE/FOAM/CLEAN AGENT—as appropriate] FIRE SYSTEM.”

\* \* \* \* \*

**PART 31—INSPECTION AND CERTIFICATION**

7. The authority citation for Part 31 continues to read as follows:

**Authority:** 33 U.S.C. 1321(j); 46 U.S.C. 2103, 3205, 3306, 3307, 3703; 46 U.S.C. Chapter 701; 49 U.S.C. 5103, 5106; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp., p. 351; Department of Homeland Security Delegation No. 0170.1. Section

31.10–21 also issued under the authority of Sect. 4109, Pub. L. 101–380, 104 Stat. 515.

8. In § 31.10–18, revise Table 31.10–18(c) and paragraph (f) to read as follows:

**§ 31.10–18 Firefighting equipment: General—TB/ALL.**

\* \* \* \* \*  
(c) \* \* \*

TABLE 31.10–18(c)

Type system	Test
Foam .....	Systems utilizing a soda solution must have that solution replaced. In all cases, ascertain that powder is not caked.
Carbon dioxide .....	Weigh cylinders. Recharge cylinder if weight loss exceeds 10% of weight of charge. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed carbon dioxide systems must be tested or renewed, as required by 46 CFR 147.60 and 147.65.
Halon 1301 and halocarbon	Recharge or replace if weight loss exceeds 5% of weight of charge, or, if cylinder has a pressure gauge, recharge cylinder if pressure loss exceeds 10%, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections to Halon 1301 and halocarbon cylinders must be tested or renewed, as required by 46 CFR 147.60 and 147.65 or 147.67. NOTE: Halon 1301 system approvals have expired, but existing systems may be retained if they are in good and serviceable condition to the satisfaction of the Coast Guard inspector.
Inert gas .....	Recharge or replace cylinder if cylinder pressure loss exceeds 5% of specified gauge pressure, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed inert extinguishers must be tested or renewed, as required by 46 CFR 147.60 and 147.66.
Water mist .....	Maintain system in accordance with the maintenance instructions in the system manufacturer's design, installation, operation, and maintenance manual.

\* \* \* \* \*

(f) The marine inspector must check all fire extinguishing system piping, controls, valves, and alarms to ascertain that the system is in good operating condition. For carbon dioxide or clean agent systems as described in 46 CFR subpart 95.16, the marine inspector must:

(1) Verify that flow is continuous and that the piping and nozzles are unobstructed; and

(2) Verify that any discharge delays and pre-discharge alarms function properly during the flow test.

\* \* \* \* \*

**PART 34—FIREFIGHTING EQUIPMENT**

9. The authority citation for Part 34 continues to read as follows:

**Authority:** 46 U.S.C. 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

10. Revise § 34.01–15 to read as follows:

**§ 34.01–15 Incorporation by reference.**

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a). To enforce any edition other than that specified in paragraph (b) of this section, the Coast Guard must publish notice of change in the **Federal Register** and make the material available

to the public. All approved material is on file at the U.S. Coast Guard, Office of Design and Engineering Standards (CG–521), 2100 2nd Street, SW., Stop 7126, Washington, DC 20593–7126 or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html). All material is available from the sources indicated in paragraph (b) of this section.

(b) The material approved for incorporation by reference in this part and the sections affected are:

(1) American Society for Testing and Materials (ASTM)

100 Barr Harbor Drive, West Conshohocken, PA 19428–2959.

(2) ASTM F 1121–87 (Reapproved 1993), Standard Specification for International Shore Connections for Marine Fire Applications, 1987.

(c) National Fire Protection Association (NFPA) 1 Batterymarch Park, Quincy, MA 02269–9101.

(1) NFPA 13–1996, Standard for the Installation of Sprinkler Systems—34.30–1.

(2) NFPA 2001–2008, Standard on Clean Agent Fire Extinguishing Systems—34.05–5(a)(4).

11. In § 34.05–5, revise the section heading and paragraphs (a)(3) through (7) to read as follows:

**§ 34.05–5 Fire extinguishing systems—T/ALL.**

(a) \* \* \*

(3) *Lamp and paint lockers and similar spaces.* A carbon dioxide or clean agent system as described in 46 CFR subpart 95.16 or a water spray system must be installed in all lamp and paint lockers, oil rooms, and similar spaces.

(4) *Pump rooms.* A carbon dioxide or clean agent system as described in 46 CFR subpart 95.16, a foam spray system, or water spray system must be installed for the protection of all pump rooms. If a clean agent system is installed for the pump room of a tank ship carrying chemical cargos, the amount of extinguishing agent must be determined by using the agent design concentration determined by the cup burner method, described in NFPA 2001 (incorporated by reference; see 46 CFR 34.01–15) for the cargo requiring the greatest amount of agent.

(5) *Boiler rooms.* On tankships contracted for on or after November 19, 1952, a carbon dioxide or clean agent system as described in 46 CFR subpart 95.16 or a foam system must be installed to protect any space containing a main or auxiliary oil fired boiler, the boiler fuel oil service pump, or any fuel oil units such as heaters, strainers, valves, manifolds, etc., that are subject to the discharge pressure of the fuel oil service pumps.



(6) *Machinery spaces.* A carbon dioxide or clean agent system as described in 46 CFR subpart 95.16 must be installed to protect any machinery space containing an internal combustion-propelling engine that uses fuel having a flashpoint of less than 110 degrees Fahrenheit.

(7) *Internal combustion installations.* A fire extinguishing system must be provided for an internal combustion installation and:

(i) The system must be a carbon dioxide or clean agent system as described in 46 CFR subpart 95.16;

(ii) On vessels of 1,000 gross tons and over on an international voyage, the construction or conversion of which is contracted for on or after May 26, 1965, a carbon dioxide or clean agent system as described in 46 CFR subpart 95.16 must be installed in any space containing internal combustion or gas turbine main propulsion machinery, auxiliaries with an aggregate power of 1,000 b.h.p. or greater, or their fuel oil units, including purifiers, valves, and manifolds; and

(iii) On vessels of 1,000 gross tons and over, the construction, conversion or automation of which is contracted for on or after January 1, 1968, a carbon dioxide or clean agent system as described in 46 CFR subpart 95.16 must be installed in any space containing internal combustion or gas turbine main propulsion machinery, auxiliaries with an aggregate power of 1,000 b.h.p. or greater, or their fuel oil units, including purifiers, valves and manifolds.

12. Add a new § 34.15–50 to read as follows:

**§ 34.15–50 Lockout valves—T/ALL.**

(a) A lockout valve must be provided on any carbon dioxide extinguishing system protecting a space over 6,000 cubic feet in volume or a space 6,000 cubic feet or less in volume that does not have a horizontal escape.

(b) The lockout valve must be a manually operated valve located in the discharge manifold prior to the stop valve or selector valves. When in the closed position, the lockout valve must provide complete isolation of the system from the protected space or spaces, making it impossible for carbon dioxide to discharge in the event of equipment failure during maintenance.

(c) The lockout valve design or locking mechanism must make it obvious whether the valve is open or closed.

(d) A valve is considered a lockout valve if it has a hasp or other means of attachment to which, or through which,

a lock can be affixed, or it has a locking mechanism built into it.

(e) The lockout valve must be locked in the closed position whenever maintenance is performed on the extinguishing system. The master must ensure that the lockout valve is locked in the open position when maintenance is complete and the system is returned to operable condition.

(f) Lockout valves added to existing systems must be approved by the Commandant for use in the system.

(g) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the lockout valve requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

13. Add new § 34.15–60 to read as follows:

**§ 34.15–60 Olfactory additives—T/ALL.**

(a) Each carbon dioxide extinguishing system must have an approved odorizing unit to produce the scent of wintergreen, the detection of which will serve as an indication that carbon dioxide gas is present in a protected area and any other area into which the carbon dioxide may migrate.

(b) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

**PART 35—OPERATIONS**

14. The authority citation for Part 35 continues to read as follows:

**Authority:** 33 U.S.C. 1321(j); 46 U.S.C. 3306, 3703, 6101; 49 U.S.C. 5103, 5106; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp., p. 351; Department of Homeland Security Delegation No. 0170.1.

15. Revise § 35.40–7 to read as follows:

**§ 35.40–7 Carbon dioxide and clean agent alarms—T/ALL.**

Each carbon dioxide or clean agent fire extinguishing alarm installed after November 19, 1952, must be conspicuously marked: “WHEN ALARM SOUNDS VACATE AT ONCE. CARBON DIOXIDE OR CLEAN AGENT BEING RELEASED.”

16. Add a new § 35.40–8 to read as follows:

**§ 35.40–8 Carbon dioxide olfactory warning signs—T/ALL.**

Each entrance to a space storing carbon dioxide cylinders, a space protected by carbon dioxide systems, or any space into which carbon dioxide might migrate must be conspicuously marked as follows:

(a) Spaces storing carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. VENTILATE THE AREA BEFORE ENTERING. A HIGH CONCENTRATION CAN OCCUR IN THIS AREA AND CAN CAUSE SUFFOCATION.”

(b) Spaces protected by carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED, DO NOT ENTER UNTIL VENTILATED. LOCK-OUT SYSTEM WHEN SERVICING.”

(c) Spaces into which carbon dioxide might migrate—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. DISCHARGE INTO NEARBY SPACE CAN COLLECT HERE. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED VACATE IMMEDIATELY.”

17. Revise § 35.40–10 to read as follows:

**§ 35.40–10 Steam, foam, carbon dioxide, or clean agent fire smothering apparatus—TB/ALL.**

Each steam, foam, carbon dioxide, or clean agent fire fighting apparatus must be marked “[CARBON DIOXIDE/STEAM/FOAM/CLEAN AGENT—as appropriate] FIRE APPARATUS,” in red letters at least 2 inches high. Branch pipe valves leading to the several compartments must be distinctly marked to indicate the compartments or parts of the vessel to which they lead.

**PART 62—VITAL SYSTEM AUTOMATION**

18. The authority citation for Part 62 continues to read as follows:

**Authority:** 46 U.S.C. 3306, 3703, 8105; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

19. Revise § 62.25–20(d)(1)(ii) to read as follows:

**§ 62.25–20 Instrumentation, alarms, and centralized stations.**

\* \* \* \* \*

- (d) \* \* \*
- (1) \* \* \*

(ii) Fire, general alarm, carbon dioxide/Halon 1301/clean agent, vital machinery, flooding, engineers’ assistance-needed, and non-vital alarms.

\* \* \* \* \*

**PART 71—INSPECTION AND CERTIFICATION**

20. The authority citation for Part 71 continues to read as follows:

**Authority:** 33 U.S.C. 1321(j); 46 U.S.C. 2113, 3205, 3306, 3307; E.O. 12234, 45 FR

58801, 3 CFR, 1980 Comp., p. 277; E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp., p. 351; Department of Homeland Security Delegation No. 0170.1.

21. Revise § 71.20–20(b) to read as follows:

**§ 71.20–20 Specific tests and inspections.**

\* \* \* \* \*

(b) Installation of carbon dioxide or clean agent extinguishing piping in accordance with 46 CFR 76.15–15 and 46 CFR subpart 95.16.

\* \* \* \* \*

22. In § 71.25–20, revise the section heading and Table 71.25–20(a)(2) to read as follows:

**§ 71.25–20 Fire detecting and extinguishing equipment.**

(a) \* \* \*

(2) \* \* \*

TABLE 71.25–20(a)(2)

Type system	Test
Foam .....	Systems utilizing a soda solution must have that solution replaced. In all cases, ascertain that powder is not caked.
Carbon dioxide .....	Weigh cylinders. Recharge cylinder if weight loss exceeds 10% of weight of charge. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed carbon dioxide systems must be tested or renewed, as required by 46 CFR 147.60 and 147.65.
Halon 1301 and halocarbon	Recharge or replace if weight loss exceeds 5% of weight of charge or if cylinder has a pressure gauge, recharge cylinder if pressure loss exceeds 10%, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections to Halon 1301 and halocarbon cylinders must be tested or renewed, as required by 46 CFR 147.60 and 147.65 or 147.67. NOTE: Halon 1301 system approvals have expired, but existing systems may be retained if they are in good and serviceable condition to the satisfaction of the Coast Guard inspector.
Inert gas .....	Recharge or replace cylinder if cylinder pressure loss exceeds 5% of specified gauge pressure, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed inert extinguishers must be tested or renewed, as required by 46 CFR 147.60 and 147.66.
Water mist .....	Maintain system in accordance with the maintenance instructions in the system manufacturer's design, installation, operation, and maintenance manual.

\* \* \* \* \*

23. Revise § 71.65–5(d)(6) to read as follows:

**§ 71.65–5 Plans and specifications required for new construction.**

\* \* \* \* \*

(d) \* \* \*

(6) Extinguishing systems, including fire main, carbon dioxide, clean agent, foam, and sprinkling systems.

\* \* \* \* \*

**PART 76—FIRE PROTECTION EQUIPMENT**

24. The authority citation for Part 76 continues to read as follows:

**Authority:** 46 U.S.C. 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

25. Revise § 76.05–1 to read as follows:

**§ 76.05–1 Fire detecting systems.**

(a) On the following vessels, approved fire detecting systems must be installed

in the locations indicated by Table 76.05–1(a):

- (1) Any vessel on an international voyage;
- (2) Any vessel of more than 150 feet in length having sleeping accommodations for passengers; and
- (3) Any vessel of 150 feet or less in length that has sleeping accommodations for 50 or more passengers. Vessels that are not on an international voyage are not required to have a detecting system in the cargo spaces.

TABLE 76.05–1(a)

Space	Detecting systems	Fixed extinguishing systems
<b>Safety areas</b>		
Wheelhouse or fire-control room .....	None required <sup>1</sup> .....	None required. <sup>1</sup>
Stairway and elevator enclosures .....	None required <sup>1</sup> .....	None required. <sup>1</sup>
Communication corridors .....	None required <sup>1</sup> .....	None required. <sup>1</sup>
Lifeboat embarkation and lowering stations .....	None required <sup>1</sup> .....	None required. <sup>1</sup>
Radio room .....	None required <sup>1</sup> .....	None required. <sup>1</sup>
<b>Accommodations</b>		
Staterooms, toilet spaces, isolated pantries, etc	None required <sup>1</sup> .....	None required. <sup>1</sup>
Offices, lockers, and isolated storerooms .....	Electric, pneumatic, or automatic sprinkling <sup>1</sup> ..	None required. <sup>1</sup>
Public spaces .....	None required with 20-minute patrol. Electric, pneumatic, or automatic sprinkling with 1 hour patrol. <sup>1</sup>	None required. <sup>1</sup>

TABLE 76.05–1(a)—Continued

Space	Detecting systems	Fixed extinguishing systems
Open decks or enclosed promenades .....	None required .....	None required.
<b>Service spaces</b>		
Galleys .....	None required <sup>1</sup> .....	None required. <sup>1</sup>
Main pantries .....	None required <sup>1</sup> .....	None required. <sup>1</sup>
Motion picture booths and film lockers .....	Electric, pneumatic, or automatic sprinkling <sup>1 2</sup> .....	None required. <sup>1</sup>
Paint and lamp rooms .....	Smoke detecting <sup>2</sup> .....	Carbon dioxide <sup>3</sup> system or carbon dioxide-alternative system as described in 46 CFR subpart 95.16.
Inaccessible baggage, mail, and specie rooms and storerooms.	Smoke detecting <sup>2</sup> .....	Carbon dioxide. <sup>3</sup>
Accessible baggage, mail, and specie rooms and storerooms.	Electric, pneumatic, or automatic sprinkling ....	None required. <sup>1</sup>
Refrigerated storerooms .....	None required .....	None required.
Carpenter, valet, photographic, and printing shops, sales rooms, etc.	Electric, pneumatic, or automatic sprinkling ....	None required. <sup>1</sup>
<b>Machinery spaces</b>		
Coal fired boilers: Bunker and boiler space .....	None required .....	None required. <sup>1</sup>
Oil fired boilers: Spaces containing oil fired boilers either main or auxiliary, their fuel oil service pumps, and/or such other fuel oil units as the heaters, strainers, valves, manifolds, etc., that are subject to the discharge pressure of the fuel oil service pumps, together with adjacent spaces to which oil can drain.	None required .....	Carbon dioxide system or carbon dioxide-alternative system as described in 46 CFR subpart 95.16 or foam. <sup>4</sup>
Internal combustion or gas turbine propelling machinery spaces.	None required .....	Carbon dioxide system or carbon dioxide-alternative system as described in 46 CFR subpart 95.16. <sup>5</sup>
Electric propulsive motors or generators of open type.	None required .....	None required.
Enclosed ventilating systems for motors and generators of electric propelling machinery.	None required .....	Carbon dioxide system or carbon dioxide-alternative system as described in 46 CFR subpart 95.16 (in ventilating system). <sup>7</sup>
Auxiliary spaces, internal combustion, or gas turbine.	None required .....	Carbon dioxide system or carbon dioxide-alternative system as described in 46 CFR subpart 95.16. <sup>7</sup>
Auxiliary spaces, electric motors, or generators	None required .....	None required.
Auxiliary spaces, steam .....	None required .....	None required.
Trunks to machinery spaces .....	None required .....	None required.
Fuel tanks .....	None required .....	None required. <sup>8</sup>
<b>Cargo spaces</b>		
Inaccessible during voyage (combustible cargo), including trunks (excluding tanks).	Smoke detecting .....	Carbon dioxide. <sup>3</sup>
Accessible during voyage (combustible cargo)	Smoke detecting, electric, pneumatic or automatic sprinkling.	Automatic or manual sprinkling.
Vehicular deck (except where no overhead deck is 30 feet in length or less).	None required .....	Manual sprinkling.
Cargo oil tanks .....	None required .....	Carbon dioxide or foam. <sup>3</sup>
Specially suitable for vehicles .....	Smoke detecting, electric, pneumatic or automatic sprinkling.	Carbon dioxide, automatic or manual sprinkling.

**Notes to Table 76.05–1(a)**

<sup>1</sup> Vessels of 100 gross tons and over contracted for, on, or before May 27, 1936, and having combustible joiner work must be fitted with an automatic sprinkling system, except in relatively incombustible spaces.

<sup>2</sup> On vessels contracted for prior to November 19, 1952, electric or pneumatic detecting may be substituted.

<sup>3</sup> On vessels contracted for prior to January 1, 1962, a steam smothering system may be accepted. However, although existing steam smothering systems may be repaired, replaced, or extended, no new system contracted for on or after January 1, 1962, will be permitted.

<sup>4</sup> Protection of auxiliary boilers, fuel oil units, valves, and manifolds are not required on vessels contracted for prior to November 19, 1952.

<sup>5</sup> Not required on vessels less than 300 gross tons (except on an international voyage) using fuel with a flashpoint higher than 110° F., where the space is normally manned.

<sup>6</sup> Not required on vessels contracted for prior to November 19, 1952.

<sup>7</sup> Not required on vessels less than 300 gross tons nor on vessels contracted for prior to November 19, 1952, except when fuel, including starting fuel, has a flashpoint of 110 °F. or less.

<sup>8</sup> When fuel with a flashpoint of 110 °F. or lower is used, the space containing the fuel tanks must be protected by a carbon dioxide system or carbon dioxide-alternative system as described in 46 CFR subpart 95.16.

(b) The arrangements and details of the fire detecting systems must meet the requirements in subparts 76.25 through 76.33 of this part.

26. Revise § 76.10–5(h) to read as follows:

**§ 76.10–5 Fire pumps.**

\* \* \* \* \*

(h) If a vessel uses main or auxiliary oil fired boilers or internal combustion propulsion machinery, when two fire pumps are required, this equipment must be located in separate spaces and the arrangement of pumps, sea connections, and sources of power must be arranged to ensure that a fire in any one space will not put all of the fire pumps out of operation. However, in vessels of less than 300 feet in length, when it is shown to the satisfaction of the Commandant that it is unreasonable or impracticable to meet this requirement due to the size or arrangement of the vessel, or for other reasons, the installation of a total flooding carbon dioxide or clean agent extinguishing system may be accepted as an alternate method of extinguishing any fire that affects the powering and operation of at least one of the required fire pumps.

27. Add a new § 76.15–50 to read as follows:

**§ 76.15–50 Lockout valves.**

(a) A lockout valve must be provided on any carbon dioxide extinguishing system protecting a space over 6,000 cubic feet in volume or a space 6,000 cubic feet or less in volume that does not have a horizontal escape.

(b) The lockout valve must be a manually operated valve located in the discharge manifold prior to the stop valve or selector valves. When in the closed position, the lockout valve must provide complete isolation of the system from the protected space or spaces, making it impossible for carbon dioxide to discharge in the event of equipment failure during maintenance.

(c) The lockout valve design or locking mechanism must make it obvious whether the valve is open or closed.

(d) A valve is considered a lockout valve if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it.

(e) The lockout valve must be locked in the closed position whenever maintenance is performed on the extinguishing system. The master must ensure that the lockout valve is locked

in the open position when maintenance is complete and the system is returned to operable condition.

(f) Lockout valves added to existing systems must be included in the system Type Approval or acceptable to the Marine Safety Center

(g) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the lockout valve requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

28. Add a new § 76.15–60 to read as follows:

**§ 76.15–60 Olfactory additives.**

(a) Each carbon dioxide extinguishing system must have an approved odorizing unit to produce the scent of wintergreen, the detection of which will serve as an indication that carbon dioxide gas is present in a protected area and any other area into which the carbon dioxide may migrate.

(b) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

**PART 78—OPERATIONS**

29. The authority citation for Part 78 continues to read as follows:

**Authority:** 33 U.S.C. 1321(j); 46 U.S.C. 2103, 3306, 6101; 49 U.S.C. 5103, 5106; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp., p. 351; Department of Homeland Security Delegation No. 0170.1.

30. Revise § 78.47–9 to read as follows:

**§ 78.47–9 Carbon dioxide and clean agent alarms.**

Each carbon dioxide or clean agent fire extinguishing alarm must be conspicuously marked: “WHEN ALARM SOUNDS VACATE AT ONCE. CARBON DIOXIDE OR CLEAN AGENT BEING RELEASED.”

31. Add a new § 78.47–11 to read as follows:

**§ 78.47–11 Carbon dioxide olfactory warning signs.**

Each entrance to a space storing carbon dioxide cylinders, a space protected by carbon dioxide systems, or any space into which carbon dioxide might migrate must be conspicuously marked as follows:

(a) Spaces storing carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. VENTILATE THE AREA BEFORE ENTERING. A HIGH

CONCENTRATION CAN OCCUR IN THIS AREA AND CAN CAUSE SUFFOCATION.”

(b) Spaces protected by carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED, DO NOT ENTER UNTIL VENTILATED. LOCK-OUT SYSTEM WHEN SERVICING.”

(c) Spaces into which carbon dioxide might migrate—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. DISCHARGE INTO NEARBY SPACE CAN COLLECT HERE. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED VACATE IMMEDIATELY.”

32. Revise § 78.47–17 to read as follows:

**§ 78.47–17 Fire extinguishing system controls.**

Each control cabinet or space containing valves or manifolds for a fire extinguishing system must be distinctly marked in conspicuous red letters at least 2 inches high: “[CARBON DIOXIDE/STEAM/FOAM/WATER SPRAY/MANUAL SPRINKLING/AUTOMATIC SPRINKLING/CLEAN AGENT—as appropriate] FIRE SYSTEM.”

**PART 91—INSPECTION AND CERTIFICATION**

33. The authority citation for Part 91 continues to read as follows:

**Authority:** 33 U.S.C. 1321(j); 46 U.S.C. 3205, 3306, 3307; 46 U.S.C. Chapter 701; Executive Order 12234; 45 FR 58801; 3 CFR, 1980 Comp., p. 277; Executive Order 12777, 56 FR 54757, 3 CFR, 1991 Comp., p. 351; Department of Homeland Security Delegation No. 0170.1.

34. Revise § 91.20–20(b) to read as follows:

**§ 91.20–20 Specific tests and inspections.**

\* \* \* \* \*

(b) For installation of carbon dioxide fire extinguishing system piping, see 46 CFR 95.15–15. For clean agent fire extinguishing piping, see 46 CFR 95.16–15.

\* \* \* \* \*

35. In § 91.25–20, revise the section heading and Table 91.25–20(a)(2) to read as follows:

**§ 91.25–20 Fire extinguishing equipment.**

- (a) \* \* \*  
(2) \* \* \*

TABLE 91.25–20(a)(2)

Type system	Test
Foam .....	Systems utilizing a soda solution must have that solution replaced. In all cases, ascertain that powder is not caked.
Carbon dioxide .....	Weigh cylinders. Recharge cylinder if weight loss exceeds 10% of weight of charge. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed carbon dioxide systems must be tested or renewed, as required by 46 CFR 147.60 and 147.65.
Halon 1301 and halocarbon	Recharge or replace if weight loss exceeds 5% of weight of charge or if cylinder has a pressure gauge, recharge cylinder if pressure loss exceeds 10%, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections to Halon 1301 and halocarbon cylinders must be tested or renewed, as required by 46 CFR 147.60 and 147.65 or 147.67. NOTE: Halon 1301 system approvals have expired, but existing systems may be retained if they are in good and serviceable condition to the satisfaction of the Coast Guard inspector.
Inert gas .....	Recharge or replace cylinder if cylinder pressure loss exceeds 5% of specified gauge pressure, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed inert extinguishers must be tested or renewed, as required by 46 CFR 147.60 and 147.66.
Water mist .....	Maintain system in accordance with the maintenance instructions in the system manufacturer's design, installation, operation, and maintenance manual.

\* \* \* \* \*  
36. Revise § 91.55–5(d)(4) to read as follows:

**§ 91.55–5 Plans and specifications required for new construction.**

\* \* \* \* \*

(d) \* \* \*

(4) Details of extinguishing systems, including fire mains, carbon dioxide, clean agent, foam, and sprinkling systems.

\* \* \* \* \*

**PART 95—FIRE PROTECTION EQUIPMENT**

37. The authority citation for Part 95 continues to read as follows:

**Authority:** 46 U.S.C. 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

38. Revise § 95.05–10(e)(3)(ii) to read as follows:

**§ 95.05–10 Fixed fire extinguishing systems.**

\* \* \* \* \*

(e) \* \* \*

(3) \* \* \*

(ii) On vessels of 1,000 gross tons and greater, a fixed carbon dioxide or clean agent system as described in subpart 95.16 of this part must be installed in any space that contains internal combustion or gas turbine main propulsion machinery, or auxiliary machinery with an aggregate power of 1,000 b.h.p. or greater, or the fuel oil units of such machinery, including purifiers, valves, and manifolds.

\* \* \* \* \*

39. In § 95.10–5(h), revise the second sentence to read as follows:

**§ 95.10–5 Fire pumps.**

\* \* \* \* \*

(h) \* \* \* However, when it is shown to the satisfaction of the Commandant that it is unreasonable or impracticable to meet this requirement due to the size or arrangement of the vessel, or for other reasons, the installation of a total flooding carbon dioxide or clean agent system may be accepted as an alternate method of extinguishing any fire that could affect the powering and operation of at least one of the required fire pumps.

40. Revise § 95.15–5(e)(2) to read as follows:

**§ 95.15–5 Quantity, pipe sizes, and discharge rates.**

\* \* \* \* \*

(e) \* \* \*

(2) The valves must be arranged so that the required quantity of carbon dioxide is discharged into any “tight” space. The discharge of two thirds of the required quantity of carbon dioxide must be completed within 10 minutes. Any faster discharge rate is also acceptable.

\* \* \* \* \*

41. Revise § 95.15–30 to read as follows:

**§ 95.15–30 Alarms.**

(a) A protected space must be fitted with an approved audible alarm if:

(1) The space is normally accessible to persons onboard while the vessel is being navigated; and

(2) Is not a paint locker or similar small space.

(b) The alarm must:

(1) Sound automatically and audibly for at least 20 seconds before carbon dioxide is discharged into the space;

(2) Be conspicuously and centrally located and be marked as required by 46 CFR 97.37–9; and

(3) Use stored gas power provided by the extinguishing agent, gas from pilot cylinders, or gas from cylinders specifically provided to power the alarms.

(c) For systems installed on or after July 1, 1957, alarms are mandatory only for systems required to be fitted with a delayed discharge.

42. Add a new § 95.15–50 to read as follows:

**§ 95.15–50 Lockout valves.**

(a) A lockout valve must be provided on any carbon dioxide extinguishing system protecting a space over 6,000 cubic feet in volume or a space 6,000 cubic feet or less in volume that does not have a horizontal escape.

(b) The lockout valve must be a manually operated valve located in the discharge manifold prior to the stop valve or selector valves. When in the closed position, the lockout valve must provide complete isolation of the system from the protected space or spaces, making it impossible for carbon dioxide to discharge in the event of equipment failure during maintenance.

(c) The lockout valve design or locking mechanism must make it obvious whether the valve is open or closed.

(d) A valve is considered a lockout valve if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it.

(e) The lockout valve must be locked in the closed position whenever maintenance is performed on the extinguishing system. The master must ensure that the lockout valve is locked in the open position when maintenance is complete and the system is returned to operable condition.

(f) Lockout valves added to existing systems must be approved by the Commandant for use in the system.

(g) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the lockout valve requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

43. Add a new § 95.15–60 to read as follows:

**§ 95.15–60 Olfactory warnings.**

(a) Each carbon dioxide extinguishing system must have an approved odorizing unit to produce the scent of wintergreen, the detection of which will serve as an indication that carbon dioxide gas is present in a protected area and any other area into which the carbon dioxide may migrate.

(b) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

44. Add a new subpart 95.16 to read as follows:

**Subpart 95.16—Fixed Clean Agent Gas Extinguishing Systems, Details**

Sec.

- 95.16–1 Application.
- 95.16–5 Controls.
- 95.16–10 Piping, fittings, valves, nozzles.
- 95.16–15 Extinguishing agent: quantity.
- 95.16–20 Extinguishing agent: cylinder storage.
- 95.16–25 Manifold and cylinder arrangements.
- 95.16–30 Enclosure openings.
- 95.16–35 Pressure relief.
- 95.16–40 Locked spaces.
- 95.16–45 Discharge delays and alarms.
- 95.16–50 Instructions.
- 95.16–60 System piping installation testing.
- 95.16–90 Installations contracted for prior to [EFFECTIVE DATE OF THIS RULE].

**Subpart 95.16—Fixed Clean Agent Gas Extinguishing Systems, Details**

**§ 95.16–1 Application.**

(a) “Clean agent” means a halocarbon or inert gas used as a fire extinguishing agent.

(b) A clean agent extinguishing system must comply with this part.

Systems contracted for prior to [THE EFFECTIVE DATE OF THIS RULE] may, as an alternative, comply with 46 CFR 95.16–90.

(c) Each clean agent system must:

(1) Be of a total flooding type to protect against Class B and Class C hazards as defined in 46 CFR 95.50–5;

(2) Address and minimize any hazard to personnel created by the effects of extinguishing agent decomposition products and combustion products, especially the effects of decomposition product hydrogen fluoride (HF), if applicable;

(3) Be accompanied by an approved manufacturer’s design, installation, operation, and maintenance manual that provides safety and remedial instructions;

(4) Be used only to protect enclosed spaces;

(5) Not employ electric power for system actuation, controls, or alarms; and

(6) Not use any source of power for alarms in protected spaces, other than the extinguishing agent, gas from pilot cylinders, or gas from cylinders specifically provided to power the alarms.

**§ 95.16–5 Controls.**

(a) At least one releasing station must be installed near the main entrance/exit to the protected space.

(b) System controls must be of an approved type and be suitably protected from damage and located outside the protected space.

(c) Systems must have releasing stations consisting of one control to operate the stop valve to the protected space and a second control to release at least the required amount of agent. These two controls must be located in a box or other enclosure clearly identified for the particular space.

(d) Systems protecting a single space not exceeding 6,000 cubic feet in gross volume may be installed without a stop valve if a suitable horizontal means of escape from the space exists.

(e) Controls may not be located in any space that could be cut off from the operator in the event of fire in the protected space.

(f) Where the extinguishing agent can be released by remote control, the system must have a manual local control at the cylinders.

(g) A pneumatic releasing control must have a local mechanical manual override feature.

(h) Automatic discharge arrangements may be used for spaces having a volume less than 6,000 cubic feet. However, automatic discharge is required for spaces having a volume less than 6,000

cubic feet where the agent is stored in the protected space, as allowed by 46 CFR 95.16–20.

(i) A system designed to use gas pressure from one or more agent storage cylinders and provide pilot pressure to actuate the release of extinguishing agent from other storage cylinders that contains three or more total storage cylinders must be equipped with at least two designated pilot cylinders, each of which is capable of manual control at the pilot cylinder.

**§ 95.16–10 Piping, fittings, valves, nozzles.**

(a) Piping, fittings, and valves must be:

(1) In accordance with the manufacturer’s approved design, installation, operation, and maintenance manual;

(2) Securely supported and when necessary protected against damage;

(3) Protected inside and out against corrosion; and

(4) Equipped with:

(i) Dead end lines (dirt traps) that extend at least 2 inches beyond the last nozzle of each distribution line and that are closed with a cap or plug; and

(ii) Drains and dirt traps, fitted where necessary to prevent dirt or moisture accumulation and located in accessible locations where possible.

(b) *Piping requirements.* Piping must be:

(1) Used exclusively for extinguishing system purposes;

(2) Protected by a pressure relief valve or equivalent in sections where gas pressure can be trapped between closed valves; and

(3) Welded if it passes through living quarters.

(c) *Piping prohibitions.* Piping must not:

(1) Use rolled groove or cut groove ends; or

(2) Be fitted with drains or other openings if it passes through living quarters.

(d) *Valve requirements.* Valves for system operation must be:

(1) Outside the protected space, and

(2) Marked, if serving a branch line, to indicate the space the branch line serves.

(e) *Valve prohibitions.* Valves may not be located in any space that could be cut off from the operator in the event of fire in the protected space.

**§ 95.16–15 Extinguishing agent: quantity.**

A separate supply need not be provided for each space protected, but the total available supply must be at least sufficient for the space requiring the greatest amount.

**§ 95.16–20 Extinguishing agent: cylinder storage.**

(a) Unless installed as required in paragraph (b) of this section, the agent must be stored outside of the protected space. Common bulkheads and decks located between the cylinder storage room and the protected spaces must meet the insulation criteria for Class A–60, as defined in 46 CFR 72.05–10.

(b) The cylinders must be stored inside the protected space, if:

(1) The space does not exceed 6,000 cubic feet gross volume; and

(2) The system can be automatically operated by a pneumatic heat actuator as well as a remote manual control.

(c) The cylinder storage space must be properly ventilated and designed to preclude an anticipated ambient temperature in excess of 130° Fahrenheit.

(d) The cylinders must be securely fastened and supported as directed in the manufacturer's approved design, installation, operation, and maintenance manual, and where necessary protected against damage.

(e) The cylinders must be mounted so they are readily accessible and capable of easy removal for recharging and inspection and for weighing in the case of halocarbon system cylinders.

(f) The cylinders must be installed to provide a space of at least 2 inches between the deck and the bottom of the cylinders.

(g) The cylinders must be mounted upright, unless otherwise specified in the instruction manual.

(h) All cylinder storage room doors must open outward.

**§ 95.16–25 Manifold and cylinder arrangements.**

(a) A check valve must be provided between each cylinder and manifold or distribution piping. The valve must be permanently marked to indicate the direction of flow.

(b) If the same cylinder is used to protect more than one space, normally, closed stop valves must be provided to direct the agent into each protected space.

(c) Each cylinder must be fabricated, tested, and marked in accordance with 46 CFR 147.60(b) and 49 CFR Part 180.

(d) The cylinders in a common manifold must be:

(1) Of the same size;

(2) Filled with the same amount of agent; and

(3) Pressurized to the same working pressure.

**§ 95.16–30 Enclosure openings.**

(a) If mechanical ventilation is provided for in a protected space, the

ventilation system must automatically shut down prior to discharge of the system to that space.

(b) If natural ventilation is provided for in a space protected by a clean agent extinguishing system, the ventilation must be capable of being easily and effectively closed off.

(c) All other openings to a protected space must be capable of being closed. Doors, shutters, or dampers must be installed for openings in the lower portion of the space. Openings in the upper portion of the space must be capable of being closed off either by permanently installed means or by the use of canvas or other material normally carried on the vessel.

**§ 95.16–35 Pressure relief.**

Tight compartments like refrigeration spaces and paint lockers must have a way to relieve the accumulation of excessive pressure within the compartment when the extinguishing agent is injected.

**§ 95.16–40 Locked spaces.**

If a space or enclosure containing extinguishing agent supply or controls is lockable, a key to the space or enclosure must be in a break glass type box conspicuously located adjacent to the opening.

**§ 95.16–45 Discharge delays and alarms.**

(a) Each system protecting a space with greater than 6,000 cubic feet gross volume or a space less than 6,000 cubic feet gross volume without a suitable horizontal escape route must have a pneumatic pre-discharge alarm and time delay.

(1) The time delay period must:

(i) Last at least 20 seconds;

(ii) Be approved by the Officer in Charge, Marine Inspection during system installation; and

(iii) Provide enough time for one person to walk from the farthest area of the protected space to the primary exit.

(2) The time delay device must be pneumatically operated and have an accuracy of –0/+20% of the rated time delay period throughout the operating temperature range and range of delay settings.

(b) The pre-discharge alarm must:

(1) Sound for the duration of the time delay;

(2) Be conspicuously and centrally located and marked as required by 46 CFR 97.37–9;

(3) Depend on the extinguishing agent, gas from a pilot cylinder, or a nitrogen cylinder specifically provided to power the alarm for its source of power; and

(4) Be audible over running machinery.

**§ 95.16–50 Instructions.**

(a) Simple, complete operating instructions must be conspicuously located at or near any release station and in the extinguishing agent cylinder storage room.

(b) On a system in which extinguishing agent cylinders are stored outside the protected space, operating instructions must also:

(1) Include a schematic diagram of the system; and

(2) Describe alternate methods of discharging the extinguishing agent into protected spaces should the manual releases or stop valve controls fail to operate.

**§ 95.16–60 System piping installation testing.**

(a) *Halocarbon systems.* A pressure test using the extinguishing agent, air or inert gas, must be conducted on halocarbon system discharge piping on completion of piping installation and before extinguishing agent cylinders are connected.

(1) Except as otherwise specified in this section:

(i) Piping from the cylinders to the stop valves or selector valves must be subjected to a pressure of 1½ times the cylinder charging pressure at 70° Fahrenheit; and

(ii) The leakage during a 2-minute period must not exceed a pressure drop of 10 percent.

(2) Individual branch lines to a protected space must be tested as described in paragraph (a)(1) of this section, except that:

(i) The pressure must be 150 pounds per square inch; and

(ii) Distribution piping must be capped within the protected space at the first joint upstream of the nozzles.

(3) Pneumatic actuation piping must be tested as described in paragraph (a)(1) of this section.

(b) *Inert gas systems.* A pressure test using air or inert gas must be conducted on each inert gas system's piping on completion of piping installation and before extinguishing agent cylinders are connected.

(1) Except as otherwise specified in this section:

(i) Piping from the cylinders to the stop valves or selector valves must be subjected to a pressure of 1,000 pounds per square inch at 70° Fahrenheit; and

(ii) The leakage during a 2-minute period must not exceed a pressure drop of 10 percent.

(2) Individual branch lines to a protected space must be tested as described in paragraph (b)(1) of this section, except that:

(i) The pressure must be 600 pounds per square inch; and

(ii) Distribution piping must be capped within the protected space at the first joint upstream of the nozzles.

(3) Pneumatic actuation piping must be tested as described in paragraph (b)(1) of this section.

(c) *Small independent systems.* In lieu of test requirements in paragraphs (a) or (b) of this section, a small independent halocarbon or inert gas system, like those found in emergency generator rooms and paint lockers, may be tested by blowing out the piping with air pressure of at least 100 pounds per square inch, if:

(1) There are no valves in the system discharge piping; and

(2) There is not more than one change in direction between the agent container and the discharge nozzle.

**§ 95.16–90 Installations contracted for prior to [EFFECTIVE DATE OF THIS RULE].**

Installations contracted for prior to [EFFECTIVE DATE OF THIS RULE] must meet the requirements of this subpart unless previously approved existing arrangements, materials, and facilities are:

(a) Maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection; and

(b) Subjected to no more than minor repairs or alterations implemented to the same standards as the original installation.

**PART 97—OPERATIONS**

45. The authority citation for Part 97 continues to read as follows:

**Authority:** 33 U.S.C. 1321(j); 46 U.S.C. 2103, 3306, 6101; 49 U.S.C. 5103, 5106; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; E.O. 12777, 56 FR 54757; 3 CFR, 1991 Comp., p. 351; Department of Homeland Security Delegation No. 0170.1.

46. Revise § 97.37–9 to read as follows:

**§ 97.37–9 Carbon dioxide and clean agent alarms.**

Each carbon dioxide or clean agent fire extinguishing alarm must be conspicuously marked: “WHEN ALARM SOUNDS VACATE AT ONCE. CARBON DIOXIDE OR CLEAN AGENT BEING RELEASED.”

47. Add a new § 97.37–11 to read as follows:

**§ 97.37–11 Carbon dioxide warnings.**

Each entrance to a space storing carbon dioxide cylinders, a space protected by carbon dioxide systems, or any space into which carbon dioxide might migrate must be conspicuously marked as follows:

(a) Spaces storing carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE

INJURY OR DEATH. VENTILATE THE AREA BEFORE ENTERING. A HIGH CONCENTRATION CAN OCCUR IN THIS AREA AND CAN CAUSE SUFFOCATION.”

(b) Spaces protected by carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED, DO NOT ENTER UNTIL VENTILATED. LOCK-OUT SYSTEM WHEN SERVICING.”

(c) Spaces into which carbon dioxide might migrate—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. DISCHARGE INTO NEARBY SPACE CAN COLLECT HERE. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED VACATE IMMEDIATELY.”

48. Revise § 97.37–13 to read as follows:

**§ 97.37–13 Fire extinguishing system controls.**

The control cabinets or spaces containing valves or manifolds for the various fire extinguishing systems must be distinctly marked in conspicuous red letters at least 2 inches high: “[STEAM/ CARBON DIOXIDE/CLEAN AGENT/ FOAM/WATER SPRAY—as appropriate] FIRE APPARATUS.”

**PART 107—INSPECTION AND CERTIFICATION**

49. The authority citation for Part 107 continues to read as follows:

**Authority:** 43 U.S.C. 1333; 46 U.S.C. 3306, 3307; 46 U.S.C. 3316; Department of Homeland Security Delegation No. 0170.1; § 107.05 also issued under the authority of 44 U.S.C. 3507.

50. Add § 107.231(w) to read as follows:

**§ 107.231 Inspection for certification.**

\* \* \* \* \*

(w) Piping for each halocarbon and inert gas extinguishing system must be tested in accordance with 46 CFR 95.16–60.

\* \* \* \* \*

51. In § 107.235, revise paragraph (b) and add paragraph (c) to read as set out below, and remove the note at the end of the section.

**§ 107.235 Servicing of hand portable fire extinguishers, semi-portable fire extinguishers and fixed fire-extinguishing systems.**

\* \* \* \* \*

(b) Each fixed fire extinguishing system must be examined for excessive corrosion and general condition and checked and serviced as indicated,

depending on the extinguishing agent used by the system.

(1) *Carbon dioxide:* Weigh cylinders. Recharge cylinder if weight loss exceeds 10% of weight of charge. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer’s instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed carbon dioxide systems must be tested or renewed, as required by 46 CFR 147.60 and 147.65.

(2) *Halon 1301 or Halocarbon:* Recharge or replace if weight loss exceeds 5% of weight of charge or, if cylinder has a pressure gauge, recharge cylinder if pressure loss exceeds 10%, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer’s instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible Halon 1301 and halocarbon cylinders must be tested or renewed as required by 46 CFR 147.60 and 147.65 or 147.67. Note that Halon 1301 system approvals have expired, but that existing systems may be retained if they are in good and serviceable condition to the satisfaction of the Coast Guard inspector.

(3) *Inert gas:* Recharge or replace cylinder if cylinder pressure loss exceeds 5% of specified gauge pressure, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer’s instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed inert extinguishers must be tested or renewed as required by 46 CFR 147.60 and 147.66.

(4) *Foam, except premix systems:* Discharge foam for approximately 15 seconds from a nozzle designated by the marine inspector, by:

(i) Discharging water from all other lines and nozzles; and

(ii) Submitting a sample of the foam liquid to the manufacturer or its authorized representative for determination of specific gravity, pH, percentage of water dilution, and solid content and for certification as a suitable firefighting foam.

(5) *Premix aqueous film forming foam:* Remove the pressure cartridge and replace the cartridge if the seal is



punctured, sampling the premix solution in accordance with the manufacturer's instructions, and replacing any cylinders that are discharged.

(c) Fire extinguishing equipment must be tested and marked as indicated, depending on the extinguishing agent used by the system —

(1) *Carbon dioxide and Halon 1301, semi-portable systems:* Cylinders and discharge hoses in accordance with 46 CFR 147.60 and 147.65; or

(2) *Halocarbon and inert gas:* Cylinders and flexible connectors in accordance with 46 CFR 147.66 and 147.67.

**PART 108—DESIGN AND EQUIPMENT**

52. The authority citation for Part 108 continues to read as follows:

**Authority:** 43 U.S.C. 1333; 46 U.S.C. 3102, 3306; Department of Homeland Security Delegation No. 0170.1.

53. Add new § 108.444 to read as follows:

**§ 108.444 Lockout valves.**

(a) A lockout valve must be provided on any carbon dioxide extinguishing system protecting a space over 6,000 cubic feet in volume or a space 6,000 cubic feet or less in volume that does not have a horizontal escape.

(b) The lockout valve must be a manually operated valve located in the discharge manifold prior to the stop valve or selector valves. When in the closed position, the lockout valve must provide complete isolation of the system from the protected space or spaces, making it impossible for carbon dioxide to discharge in the event of equipment failure during maintenance.

(c) The lockout valve design or locking mechanism must make it obvious whether the valve is open or closed.

(d) A valve is considered a lockout valve if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it.

(e) The lockout valve must be locked in the closed position whenever maintenance is performed on the extinguishing system. The master must ensure that the lockout valve is locked

in the open position when maintenance is complete and the system is returned to operable condition.

(f) Lockout valves added to existing systems must be approved by the Commandant for use in the system.

(g) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the lockout valve requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

54. Add a new § 108.446 to read as follows:

**§ 108.446 Olfactory additives.**

(a) Each carbon dioxide extinguishing system must have an approved odorizing unit to produce the scent of wintergreen, the detection of which will serve as an indication that carbon dioxide gas is present in a protected area and any other area into which the carbon dioxide may migrate.

(b) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

55. Add a new § 108.626 to read as follows:

**§ 108.626 Carbon dioxide olfactory warning signs.**

Each entrance to a space storing carbon dioxide cylinders, a space protected by carbon dioxide systems, or any space into which carbon dioxide might migrate must be conspicuously marked as follows:

(a) Spaces storing carbon dioxide—  
“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. VENTILATE THE AREA BEFORE ENTERING. A HIGH CONCENTRATION CAN OCCUR IN THIS AREA AND CAN CAUSE SUFFOCATION.”

(b) Spaces protected by carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED, DO NOT ENTER UNTIL VENTILATED. LOCK-OUT SYSTEM WHEN SERVICING.”

(c) Spaces into which carbon dioxide might migrate—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. DISCHARGE INTO NEARBY SPACE CAN COLLECT HERE. WHEN ALARM

OPERATES OR WINTERGREEN SCENT IS DETECTED VACATE IMMEDIATELY.”

56. Revise the section heading to § 108.627 to read as follows:

**§ 108.627 Carbon dioxide and clean agent alarms.**

\* \* \* \* \*

57. Revise § 108.631(a) to read as follows:

**§ 108.631 Fixed fire extinguishing system controls.**

(a) Each cabinet or space that contains a valve, control, or manifold of a fixed fire extinguishing system must be marked in conspicuous red letters at least 2 inches high: “[CARBON DIOXIDE/CLEAN AGENT/FOAM/WATER SPRAY—as appropriate] FIRE APPARATUS.”

\* \* \* \* \*

**PART 112—EMERGENCY LIGHTING AND POWER SYSTEMS**

58. The authority citation for Part 112 continues to read as follows:

**Authority:** 46 U.S.C. 3306, 3703; Department of Homeland Security Delegation No. 0170.1.

59. Revise § 112.15–5(v) to read as follows:

**§ 112.15–5 Final emergency loads.**

\* \* \* \* \*

(v) Each smoke extraction fan, not including smoke detector sampling, and carbon dioxide or clean agent exhaust fans for spaces.

**PART 115—INSPECTION AND CERTIFICATION**

60. The authority citation for Part 115 continues to read as follows:

**Authority:** 33 U.S.C. 1321(j); 46 U.S.C. 2103, 3205, 3306, 3307; 49 U.S.C. App. 1804; E.O. 11735, 38 FR 21243, 3 CFR, 1971–1975 Comp., p. 743; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1

61. In § 115.810, revise Table 115.810(b) to read as follows:

**§ 115.810 Fire protection.**

\* \* \* \* \*

(b) \* \* \*

TABLE 115.810(b)—SEMI-PORTABLE AND FIXED FIRE EXTINGUISHING SYSTEMS

Type system	Test
Carbon dioxide .....	Weigh cylinders. Recharge cylinder if weight loss exceeds 10% of weight of charge. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed carbon dioxide systems must be tested or renewed, as required by 46 CFR 147.60 and 147.65.

TABLE 115.810(b)—SEMI-PORTABLE AND FIXED FIRE EXTINGUISHING SYSTEMS—Continued

Type system	Test
Halon 1301 and halocarbon	Recharge or replace if weight loss exceeds 5% of weight of charge or if cylinder has a pressure gauge, recharge cylinder if pressure loss exceeds 10%, adjusted for temperature. Test time delays, alarms, and ventilation shut-downs with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections to Halon 1301 and halocarbon cylinders must be tested or renewed, as required by 46 CFR 147.60 and 147.65 or 147.67. Note that Halon 1301 system approvals have expired, but that existing systems may be retained if they are in good and serviceable condition to the satisfaction of the Coast Guard inspector.
Dry chemical (cartridge operated).	Examine pressure cartridge and replace if end is punctured, has leaked, or is otherwise unsuitable. Inspect hose and nozzle to see if they are clear. Insert charged cartridge. Ensure dry chemical is free flowing, not caked, and extinguisher contains full charge.
Dry chemical (stored pressure).	See that pressure gauge is in operating range. If not, or if the seal is broken, weigh or otherwise determine that extinguisher is fully charged with dry chemical. Recharge cylinder if pressure is low or if dry chemical is needed.
Foam (stored pressure) .....	See that any pressure gauge is in the operating range. If not, or if the seal is broken, weigh or otherwise determine that extinguisher is fully charged with foam. Recharge cylinder if pressure is low or if foam is needed. Replace premixed agent every 3 years.
Inert gas .....	Recharge or replace cylinder if cylinder pressure loss exceeds 5% of specified gauge pressure, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed inert extinguishers must be tested or renewed as required by 46 CFR 147.60 and 147.66.
Water mist .....	Maintain system in accordance with maintenance instructions in system manufacturer's design, installation, operation, and maintenance manual.

\* \* \* \* \*

**PART 118—FIRE PROTECTION EQUIPMENT**

62. The authority citation for Part 118 continues to read as follows:

**Authority:** 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

63. In § 118.410, add new paragraphs (f)(7) through (f)(13) and add new paragraph (h) to read as follows:

**§ 118.410 Fixed gas fire extinguishing systems.**

\* \* \* \* \*

(f) \* \* \*

(7) A lockout valve must be provided on any carbon dioxide extinguishing system protecting a space over 6,000 cubic feet in volume or a space 6,000 cubic feet or less in volume that does not have a horizontal escape.

(8) The lockout valve must be a manually operated valve located in the discharge manifold prior to the stop valve or selector valves. When in the closed position, the lockout valve must provide complete isolation of the system from the protected space or spaces, making it impossible for carbon dioxide to discharge in the event of equipment failure during maintenance.

(9) The lockout valve design or locking mechanism must make it obvious whether the valve is open or closed.

(10) A valve is considered a lockout valve if it has a hasp or other means of

attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it.

(11) The lockout valve must be locked in the closed position whenever maintenance is performed on the extinguishing system. The master must ensure that the lockout valve is locked in the open position when maintenance is complete and the system is returned to operable condition.

(12) Lockout valves added to existing systems must be approved by the Commandant for use in the system.

(13) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the lockout valve requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

\* \* \* \* \*

(h) *Olfactory additives.* (1) Each carbon dioxide extinguishing system must have an approved odorizing unit to produce the scent of wintergreen, the detection of which will serve as an indication that carbon dioxide gas is present in a protected area and any other area into which the carbon dioxide may migrate.

(2) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

**PART 119—MACHINERY INSTALLATION**

64. The authority citation for Part 119 continues to read as follows:

**Authority:** 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

65. Revise § 119.710(a)(3) to read as follows:

**§ 119.710 Piping for vital systems.**

(a) \* \* \*

(3) Carbon dioxide, Halon 1301, and clean agent systems;

\* \* \* \* \*

**PART 122—OPERATIONS**

66. The authority citation for Part 122 continues to read as follows:

**Authority:** 46 U.S.C. 2103, 3306, 6101; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

67. In § 122.612, add new paragraph (i) to read as follows:

**§ 122.612 Fire protection equipment.**

\* \* \* \* \*

(i) *Carbon dioxide olfactory warning signs.* Each entrance to a space storing carbon dioxide cylinders, a space protected by carbon dioxide systems, or any space into which carbon dioxide might migrate must be conspicuously marked as follows:

(1) Spaces storing carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. VENTILATE THE AREA BEFORE ENTERING. A HIGH CONCENTRATION CAN OCCUR IN THIS AREA AND CAN CAUSE SUFFOCATION.”

(2) Spaces protected by carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED, DO NOT ENTER UNTIL VENTILATED. LOCK-OUT SYSTEM WHEN SERVICING.”

(3) Spaces into which carbon dioxide might migrate—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. DISCHARGE INTO NEARBY SPACE CAN COLLECT HERE. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED VACATE IMMEDIATELY.”

**PART 131—OPERATIONS**

68. The authority citation for Part 131 continues to read as follows:

**Authority:** 33 U.S.C. 1321(j); 46 U.S.C. 3306, 6101, 10104; E.O. 12234, 3 CFR, 1980 Comp., p. 277; E.O. 12777, 3 CFR, 1991 Comp., p. 351; Department of Homeland Security Delegation No. 0170.1.

69. Revise § 131.815 to read as follows:

**§ 131.815 Carbon dioxide and clean agent alarms.**

Each carbon dioxide or clean agent fire extinguishing alarm must be

conspicuously marked: “WHEN ALARM SOUNDS VACATE AT ONCE. CARBON DIOXIDE OR CLEAN AGENT BEING RELEASED.”

70. Add a new § 131.817 to read as follows:

**§ 131.817 Carbon dioxide olfactory warning signs.**

Each entrance to a space storing carbon dioxide cylinders, a space protected by carbon dioxide systems, or any space into which carbon dioxide might migrate must be conspicuously marked as follows:

(a) Spaces storing carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. VENTILATE THE AREA BEFORE ENTERING. A HIGH CONCENTRATION CAN OCCUR IN THIS AREA AND CAN CAUSE SUFFOCATION.”

(b) Spaces protected by carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED, DO NOT ENTER UNTIL VENTILATED. LOCK-OUT SYSTEM WHEN SERVICING.”

(c) Spaces into which carbon dioxide might migrate—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH.

DISCHARGE INTO NEARBY SPACE CAN COLLECT HERE. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED VACATE IMMEDIATELY.”

71. Revise § 131.825 to read as follows:

**§ 131.825 Fixed fire extinguishing system controls.**

Each control cabinet or space containing a valve or manifold for a fire extinguishing system must be distinctly marked in conspicuous red letters at least 2 inches high: “[CARBON DIOXIDE/HALON/CLEAN AGENT] FIRE APPARATUS”, as appropriate.

**PART 132—FIRE-PROTECTION EQUIPMENT**

72. The authority citation for Part 132 continues to read as follows:

**Authority:** 46 U.S.C. 3306, 3307; Department of Homeland Security Delegation No. 0170.1.

73. In § 132.350, revise Table 132.350 to read as follows:

**§ 132.350 Tests and inspections of fire-extinguishing equipment.**

\* \* \* \* \*

TABLE 132.350—TESTS OF SEMI-PORTABLE AND FIXED FIRE-EXTINGUISHING SYSTEMS

Type of system	Test
Carbon dioxide .....	Weigh cylinders. Recharge cylinder if weight loss exceeds 10% of weight of charge. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed carbon dioxide systems must be tested or renewed, as required by 46 CFR 147.60 and 147.65.
Halon 1301 and halocarbon	Recharge or replace if weight loss exceeds 5% of weight of charge or if cylinder has a pressure gauge, recharge cylinder if pressure loss exceeds 10%, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections to Halon 1301 and halocarbon cylinders must be tested or renewed, as required by 46 CFR 147.60 and 147.65 or 147.67. Note that Halon 1301 system approvals have expired, but that existing systems may be retained if they are in good and serviceable condition to the satisfaction of the Coast Guard inspector.
Dry chemical (cartridge-operated).	Examine pressure cartridge and replace if end is punctured or if cartridge has leaked or is otherwise unsuitable. Inspect hose and nozzle to see that they are clear. Insert charged cartridge. Ensure that dry chemical is free-flowing (not caked) and that extinguisher contains full charge.
Dry chemical (stored pressure).	See that pressure gauge is in operating range. If not, or if seal is broken, weigh or otherwise determine that extinguisher is fully charged with dry chemical. Recharge if pressure is low or if dry chemical is needed.
Foam (stored pressure) .....	See that any pressure gauge is in operating range. If it is not, or if seal is broken, weigh or otherwise determine that extinguisher is fully charged with foam. Recharge if pressure is low or if foam is needed. Replace premixed agent every 3 years.
Inert gas .....	Recharge or replace cylinder if cylinder pressure loss exceeds 5% of specified gauge pressure, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed inert extinguishers must be tested or renewed as required by 46 CFR 147.60 and 147.66.
Water mist .....	Maintain system in accordance with the maintenance instructions in the system manufacturer's design, installation, operation, and maintenance manual.

\* \* \* \* \*

**PART 147—HAZARDOUS SHIPS' STORES**

74. The authority citation for Part 147 continues to read as follows:

**Authority:** 46 U.S.C. 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

75. Revise § 147.7 to read as follows:

**§ 147.7 Incorporation by reference.**

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a). To enforce any edition other than that specified below, the Coast Guard must publish notice of change in the **Federal Register** and make the material available to the public. All approved material is on file at the U.S. Coast Guard, Office of Design and Engineering Standards (CG-521), 2100 2nd Street, SW., Stop 7126, Washington, DC 20593-7126 or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html). All material is available from the sources indicated below.

(b) American Boat and Yacht Council, Inc. (ABYC), 3069 Solomons Island Road, Edgewater, MD 21037.

(1) ABYC H-25-81—Portable Fuel Systems and Portable Containers for Flammable Liquids, May 12, 1981: 147.45.

(2) [Reserved].

(c) American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc. (ASHRAE), Publication Sales Department, 1791 Tullie Circle, NE, Atlanta, GA 30329.

(1) ANSI/ASHRAE 34-78—Number Designation of Refrigerants, approved 1978: 147.90.

(2) [Reserved].

(d) National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269-9101.

(1) NFPA 2001, "Standard on Clean Agent Fire Extinguishing Systems" 2008 Edition: 147.66, 147.67.

(2) [Reserved].

(e) Public Health Service, Department of Health and Human Services (DHHS), Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(1) DHHS Publication No. (PHS) 84-2024—The Ship's Medicine Chest and

Medical Aid at Sea, revised 1984: 147.105.

(2) [Reserved].

(f) Underwriters Laboratories, Inc. (UL), 333 Pfingsten Road, Northbrook, IL 60062.

(1) UL 30—Standard for Metal Safety Cans, 7th Ed., March 11, 1985, revised March 12, 1985 and March 3, 1987: 147.45.

(2) UL 1185—Standard for Portable Marine Fuel Tanks, Second Edition, March 13, 1978, revised July 6, 1984: 147.45.

(3) UL 1313—Standard for Nonmetallic Safety Cans for Petroleum Products, 1st Ed., March 15, 1982, revised January 3, 1984 and March 22, 1985: 147.45.

(4) UL 1314—Standard for Special-Propose Containers, 1st Ed., July 7, 1983, revised February 7, 1984 and September 23, 1986: 147.45.

76. Revise § 147.45(f)(4), (5), and (6) to read as follows:

**§ 147.45 Flammable and combustible liquids.**

\* \* \* \* \*

(f) \* \* \*

(4) A portable outboard fuel tank meeting the specifications of ABYC H-25-81 (incorporated by reference, see 46 CFR 147.7) or one identified by Underwriters Laboratories as meeting the specifications of UL 1185 (incorporated by reference, see 46 CFR 147.7);

(5) A portable safety container identified by Underwriters Laboratories as meeting the specifications of UL 30 or UL 1313 (both incorporated by reference, see 46 CFR 147.7); or

(6) A portable safety container identified by Underwriters Laboratories as meeting the requirements of UL 1314 (incorporated by reference, see 46 CFR 147.7).

\* \* \* \* \*

77. Revise § 147.60(a)(4) to read as follows:

**§ 147.60 Compressed gases.**

(a) \* \* \*

(4) Except as provided in 46 CFR 147.65, 147.66, and 147.67, maintained and retested in accordance with 49 CFR 180.

\* \* \* \* \*

78. Add a new § 147.66 to read as follows:

**§ 147.66 Inert gas fire extinguishing systems.**

(a) Inert gas cylinders forming part of a clean agent fixed fire extinguishing system must be retested every five years, except that cylinders with a water capacity of 125 pounds or less may be

retested every 10 years in accordance with 49 CFR 180.209(b).

(b) An inert gas cylinder must be removed from service if it:

(1) Leaks;  
(2) Is dented, bulging, severely corroded, or otherwise weakened;  
(3) Has lost more than five percent of its tare weight; or

(4) Has been involved in a fire.

(c) Flexible connections between cylinders and discharge piping for fixed inert gas fire extinguishing systems must be renewed or retested in accordance with § 7.3 of NFPA 2001 (incorporated by reference, see 46 CFR 147.7).

79. Add new § 147.67 to read as follows:

**§ 147.67 Halocarbon fire extinguishing systems.**

(a) Each halocarbon cylinder forming part of a clean agent fixed fire extinguishing system must be:

(1) Retested at least once every 12 years and before recharging if it has been discharged and more than five years have elapsed since the last test; or

(2) As an alternative, a cylinder conforming to the requirements of 49 CFR 180.209(g) may be given the complete external visual inspection in lieu of hydrostatic testing provided for by that section.

(b) A halocarbon cylinder must be removed from service if it:

(1) Leaks;  
(2) Is dented, bulging, severely corroded, or otherwise weakened;  
(3) Has lost more than five percent of its tare weight; or  
(4) Has been involved in a fire.

(c) Flexible connections between cylinders and discharge piping for halocarbon fire extinguishing systems must be renewed or retested in accordance with section 7.3 of NFPA 2001 (incorporated by reference, see 46 CFR 147.7).

**PART 162—ENGINEERING EQUIPMENT**

80. The authority citation for Part 162 continues to read as follows:

**Authority:** 33 U.S.C. 1321(j), 1903; 46 U.S.C. 3306, 3703, 4104, 4302; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; E.O. 11735, 38 FR 21243, 3 CFR, 1971-1975 Comp., p. 793; Department of Homeland Security Delegation No. 0170.1.

81. Add a new subpart 162.161 to read as follows:

**Subpart 162.161—Fixed Clean Agent Fire Extinguishing Systems**

Sec.  
162.161-1 Scope.  
162.161-2 Incorporation by reference.

- 162.161-3 Materials.
- 162.161-4 Construction.
- 162.161-5 Instruction manual for design, installation, operation, and maintenance.
- 162.161-6 Tests for approval.
- 162.161-7 Inspections at production.
- 162.161-8 Marking.
- 162.161-9 Procedure for approval.

### Subpart 162.161—Fixed Clean Agent Fire Extinguishing Systems

#### § 162.161-1 Scope.

(a) This subpart applies to each engineered fixed fire extinguishing system using a halocarbon or an inert gas as agent. It does not apply to pre-engineered systems.

(b) Each system must be designed for protection against fires in both Class B flammable liquids and Class C energized electrical equipment, as those hazard classes are defined in NFPA 2001 (incorporated by reference, *see* 46 CFR 162.161-2).

(c) Each system must meet the requirements of this subpart, be listed or approved by an independent laboratory approved by the Coast Guard and listed at <http://cgmix.uscg.mil/>, bear the mark of the laboratory, and be approved by the Coast Guard under 46 CFR 159.005-13.

#### § 162.161-2 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a). To enforce any edition other than that specified below, the Coast Guard must publish notice of change in the **Federal Register** and make the material available to the public. All approved material is on file at the U.S. Coast Guard, Office of Design and Engineering Standards (CG-521), 2100 2nd Street, SW., Stop 7126, Washington, DC 20593-7126 or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html). All material is available from the sources indicated below.

(b) National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269-9101.

(1) NFPA 2001, "Standard on Clean Agent Fire Extinguishing Systems" 2008 Edition: 162.161-1, 162.161-3.

(2) [Reserved]

(c) Underwriters Laboratories, Inc. (UL), 333 Pfingsten Road, Northbrook, IL 60062.

(1) UL 2127, "Standard for Inert Gas Clean Agent Extinguishing System

Units" 1999 Edition: 162.161-5, 162.161-6, 162.161-7.

(2) UL 2166, "Standard for Halocarbon Clean Agent Extinguishing System Units" 1999 Edition: 162.161-5, 162.161-6, 162.161-7.

(d) International Maritime Organization (IMO), Publications Section, 4 Albert Embankment, London SE1 7SR, United Kingdom:

(1) MSC/Circ. 848, "Revised Guidelines for The Approval of Equivalent Fixed Gas Fire-Extinguishing Systems, as Referred to in Chapter II-2 of SOLAS 74, for Machinery Spaces and Cargo Pump-Rooms" 1998 Edition: 162.161-6.

(2) MSC.1/Circ. 1267, "Amendments to Revised Guidelines for The Approval of Equivalent Fixed Gas Fire-Extinguishing Systems, as Referred to in SOLAS 74, for Machinery Spaces and Cargo Pump-Rooms (MSC/Circ. 848)" 2008 Edition: 162.161-6.

#### § 162.161-3 Materials.

(a) All system components must meet the requirements of NFPA 2001 (incorporated by reference, *see* 46 CFR 162.161-2) and be made of metal, except for bushings, o-rings, and gaskets. Aluminum or aluminum alloys may not be used.

(b) Metal components must:

(1) Have a solidus melting point of at least 1700° Fahrenheit;

(2) Be corrosion resistant; and

(3) Be galvanically compatible with each adjoining metal component, or if galvanically incompatible, be separated by a bushing, o-ring, gasket, or similar device. (c) Each extinguishing agent must be:

(1) Listed as an acceptable total flooding agent for occupied areas on the Environmental Protection Agency's Significant New Alternative Products (SNAP) list, 40 CFR part 82, subpart G, Appendix A; and

(2) Identified as an extinguishing agent in NFPA 2001 (incorporated by reference, *see* 46 CFR 162.161-2).

(d) The design concentration of extinguishing agent required for each system must be determined by the cup burner method, described in NFPA 2001, for the specific fuel requiring the highest extinguishing concentration.

(e) The quantity of agent required for each protected space must be calculated using a safety factor of 1.3 times the design concentration. The quantity must be calculated at the minimum expected ambient temperature using the design concentration based on either:

(1) Gross volume, including the casing, bilge, and free air contained in air receivers; or

(2) Net volume, calculated as shown in NFPA 2001 (incorporated by

reference, *see* 46 CFR 162.161-2), including the casing, bilge, and free air contained in air receivers, if one of the following is satisfactorily performed:

(i) Full discharge test; or

(ii) Enclosure integrity procedure in accordance with Annex C of NFPA 2001; for discharge or enclosure integrity tests, the minimum concentration hold time must be 15 minutes, and the extinguishing agent concentration at the end of the hold time must be at least 85% of the design concentration.

(f) If fuel can drain from the compartment being protected to an adjacent compartment or if the compartments are not entirely separate, the quantity must be sufficient for both compartments.

#### § 162.161-4 Construction.

(a) Each pressure vessel must comply with 46 CFR 147.60(a) and (b).

(b) Each system must be capable of operation without an external power source.

(c) Manual actuation for the system must be by mechanical or pneumatic means.

(d) Automatically actuated systems must be released by pneumatic or fusible element detection systems.

(e) Each system installed with the extinguishing agent cylinders stored inside a protected space of 6,000 cubic feet or less must use automatic actuation as the primary means of actuation and have a remote backup manual mechanical actuator.

(f) Each container charged with nitrogen must have a pressure gauge.

#### § 162.161-5 Instruction manual for design, installation, operation, and maintenance.

(a) The manufacturer must prepare a system instruction manual for design, installation, operation, and maintenance of the system. The manual must be reviewed and accepted by an independent laboratory listed in 46 CFR 162.161-10 and be approved by the Coast Guard under 46 CFR 159.005-13.

(b) The manual must include:

(1) The design information as required in the Design Manual as detailed in UL 2166 (incorporated by reference, *see* 46 CFR 162.161-2) for halocarbon systems and UL 2127 (incorporated by reference, *see* 46 CFR 162.161-2) for inert gas systems;

(2) Installation, operation, and maintenance instructions as required in the Installation, Operation, and Maintenance Instruction Manual detailed in UL 2166 for halocarbon systems and UL 2127 for inert gas systems;

(3) Identification of the computer program listed or approved by the

independent laboratory for designing the system;

(4) A sample diagram and calculation for a marine system for a large inspected vessel with several spaces to be protected by the same system;

(5) The approval number issued by the Coast Guard for the system under 46 CFR 159.005–13;

(6) A parts list with manufacturer's parts numbers and description of each system component;

(7) An index of chapters; and

(8) Issue and revision dates for each page.

(c) The manufacturer of each system must provide at least one copy of the system manual with each system.

#### § 162.161–6 Tests for approval.

Prior to approval by an independent laboratory each system must:

(a) Satisfy the test method of MSC/Circ. 848 as amended by MSC.1/Circ. 1267 (both incorporated by reference, see § 162.161–2), except that:

(1) The Fire Type A (Tell tale) test must be conducted when the charged system cylinders have been conditioned for 24 hours at 32° Fahrenheit or at the expected service temperature, if lower than 32° F.

(2) [Reserved]

(b) Satisfy the following test requirements as indicated in UL 2166 (incorporated by reference, see 46 CFR 162.161–2) for halocarbon systems or UL 2127 for inert gas systems (incorporated by reference, see 46 CFR 162.161–2):

(1) Nozzle distribution;

(2) Flow calculation method verification to determine that the manufacturer's calculation method accurately predicts the discharge time, nozzle pressure, and distribution of the extinguishing agent;

(3) Salt spray corrosion resistance for marine-type systems;

(4) Vibration resistance of installed components for marine-type systems; and

(5) Any additional tests contained in UL 2166 for halocarbon systems or UL 2127 for inert gas systems, as required for listing by the independent laboratory.

(c) Equivalent length of installed components must be identified and included in the test report in accordance with UL 2166 for halocarbon systems or UL 2127 for inert gas systems.

#### § 162.161–7 Inspections at production.

(a) The system must be inspected in accordance with this section and 46 CFR 159.007–1 through 159.007–13, and tested using any additional tests that the Commandant (CG–5214) may deem

necessary to maintain control of quality and to ensure compliance with this subpart.

(b) The manufacturer must:

(1) Institute procedures to maintain control over the materials used, over the manufacturing of the systems, and over finished systems;

(2) Admit the independent laboratory inspector and any representative of the Coast Guard to any place where work is being done on systems and any place where parts or complete systems are stored;

(3) Allow the independent laboratory inspector and any representative of the Coast Guard to take samples of systems for tests prescribed by this subpart; and

(4) Conduct a leakage test on each system cylinder-valve assembly in accordance with subsections 57.1 through 57.4.2 of UL 2166 (incorporated by reference, see 46 CFR 162.161–2) for halocarbon systems or subsection 55.4 of UL 2127 (incorporated by reference, see 46 CFR 162.161–2) for inert gas systems.

#### § 162.161–8 Marking.

The following information must be displayed on a permanent metal or pressure-sensitive nameplate attached to each agent storage cylinder/valve assembly:

(a) Manufacturer's name, address, and telephone number;

(b) Coast Guard approval number assigned to the system under 46 CFR 159.005–13;

(c) Identifying mark of the laboratory;

(d) Reference to the laboratory's listing standard;

(e) Type extinguishing agent;

(f) Operating pressure at 70° Fahrenheit;

(g) Storage temperature range;

(h) Factory test pressure of the cylinder;

(i) Reference to the manufacturer's marine design, installation, operation, and maintenance manual;

(j) Weight of agent charge and gross weight of cylinder/valve assembly;

(k) Minimum maintenance instructions; and

(l) Any other information required by the laboratory or another government agency.

#### § 162.161–9 Procedure for approval.

(a) Preapproval review is required as detailed in 46 CFR 159.005–5 and 159.005–7.

(b) Applications for approval must be submitted in accordance with 46 CFR 159.005–9 through 159.005–12 to the Commandant (CG–5214). In addition to the listed requirements:

(1) Evidence must be shown that an acceptable follow-up factory inspection

program is in place in each factory location. This could be demonstrated by providing an original copy of the contract for a follow-up program between the manufacturer and the independent laboratory. The follow-up program must include provisions that prohibit changes to the approved equipment without review and approval by the independent laboratory.

(2) Two design, installation, operation and maintenance manuals must be submitted.

#### PART 167—PUBLIC NAUTICAL SCHOOL SHIPS

82. The authority citation for Part 167 continues to read as follows:

**Authority:** 46 U.S.C. 3306, 3307, 6101, 8105; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

83. Amend § 167.45–1(a)(3), (a)(7), (a)(8), and (a)(9) to read as follows:

#### § 167.45–1 Steam, carbon dioxide, Halon 1301, and clean agent fire extinguishing systems.

(a) \* \* \*

(3) Cabinets, boxes, or casings enclosing manifolds or valves must be marked in conspicuous red letters at least 2 inches high: "STEAM/CARBON DIOXIDE/HALON/CLEAN AGENT—as appropriate] FIRE APPARATUS."

\* \* \* \* \*

(7) At annual inspections, each carbon dioxide cylinder, whether fixed or portable, each Halon 1301 cylinder, and each clean agent cylinder must be examined externally and replaced if excessive corrosion is found; and:

(i) Each carbon dioxide cylinder must be weighed and recharged if its weight loss exceeds 10% of the charge;

(ii) Each Halon 1301 and halocarbon cylinder must be weighed and checked, and recharged or replaced if weight loss exceeds 5% of required weight of charge or if cylinder pressure loss exceeds 10% of specified gauge pressure adjusted for temperature; and

(iii) Each inert gas cylinder must be checked and recharged or replaced if cylinder pressure loss exceeds 5% of specified gauge pressure adjusted for temperature.

(8) Carbon dioxide, Halon 1301, and clean agent cylinders carried on board nautical school ships must be tested and marked in accordance with the requirements of 46 CFR 147.60, 147.65, 147.66, and 147.67.

(9) On all systems test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction

manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed.

\* \* \* \* \*

84. In § 167.45–45, add new paragraphs (d) and (e) to read as follows:

**§ 167.45–45 Carbon dioxide fire extinguishing system requirements.**

\* \* \* \* \*

(d) *Lockout valve.* (1) A lockout valve must be provided on any carbon dioxide extinguishing system protecting a space over 6,000 cubic feet in volume or a space 6,000 cubic feet or less in volume that does not have a horizontal escape.

(2) The lockout valve must be a manually operated valve located in the discharge manifold prior to the stop valve or selector valves. When in the closed position, the lockout valve must provide complete isolation of the system from the protected space or spaces, making it impossible for carbon dioxide to discharge in the event of equipment failure during maintenance.

(3) The lockout valve design or locking mechanism must make it obvious whether the valve is open or closed.

(4) A valve is considered a lockout valve if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it.

(5) The lockout valve must be locked in the closed position whenever maintenance is performed on the extinguishing system. The master must ensure that the lockout valve is locked in the open position when maintenance is complete and the system is returned to operable condition.

(6) Lockout valves added to existing systems must be approved by the Commandant for use in the system.

(7) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the lockout valve requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

(e)(1) Each carbon dioxide extinguishing system must have an approved odorizing unit to produce the scent of wintergreen, the detection of which will serve as an indication that carbon dioxide gas is present in a protected area and any other area into which the carbon dioxide may migrate.

(2) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

85. Revise § 167.55–5(c) to read as follows:

**§ 167.55–5 Marking of fire and emergency equipment.**

\* \* \* \* \*

(c)(1) *Steam, foam, carbon dioxide, Halon, or clean agent fire smothering apparatus.* Steam, foam, carbon dioxide, Halon, or clean agent fire smothering apparatus must be marked “[STEAM/FOAM/CARBON DIOXIDE/HALON/CLEAN AGENT—as appropriate] FIRE APPARATUS,” in red letters at least 2 inches high, and the valves of all branch piping leading to the several compartments must be distinctly marked to indicate the compartments or parts of the nautical school ship to which they lead.

(2) Each entrance to a space storing carbon dioxide cylinders, a space protected by carbon dioxide systems, or any space into which carbon dioxide

might migrate must be conspicuously marked as follows:

(i) Spaces storing carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. VENTILATE THE AREA BEFORE ENTERING. A HIGH CONCENTRATION CAN OCCUR IN THIS AREA AND CAN CAUSE SUFFOCATION.”

(ii) Spaces protected by carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED, DO NOT ENTER UNTIL VENTILATED. LOCK-OUT SYSTEM WHEN SERVICING.”

(iii) Spaces into which carbon dioxide might migrate—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. DISCHARGE INTO NEARBY SPACE CAN COLLECT HERE. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED VACATE IMMEDIATELY.”

\* \* \* \* \*

**PART 169—SAILING SCHOOL VESSELS**

86. The authority citation for Part 169 continues to read as follows:

**Authority:** 33 U.S.C. 1321(j); 46 U.S.C. 3306, 6101; Pub. L. 103–206, 107 Stat. 2439; E.O. 11735, 38 FR 21243, 3 CFR, 1971–1975 Comp., p. 793; Department of Homeland Security Delegation No. 0170.1; § 169.117 also issued under the authority of 44 U.S.C. 3507.

87. In § 169.247, revise Table 169.247(a)(2) and add and reserve paragraph (b) to read as follows:

**§ 169.247 Firefighting equipment.**

\* \* \* \* \*

TABLE 169.247(a)(2)—FIXED SYSTEMS

Type system	Test
Carbon dioxide .....	Weigh cylinders. Recharge cylinder if weight loss exceeds 10% of weight of charge. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed carbon dioxide systems must be tested or renewed, as required by 46 CFR 147.60 and 147.65.
Halon 1301 or halocarbon ...	Recharge or replace if weight loss exceeds 5% of weight of charge or if cylinder has a pressure gauge, recharge cylinder if pressure loss exceeds 10%, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections to Halon 1301 and halocarbon cylinders must be tested or renewed, as required by 46 CFR 147.60 and 147.65 or 147.67. Note that Halon 1301 system approvals have expired, but that existing systems may be retained if they are in good and serviceable condition to the satisfaction of the Coast Guard inspector.
Inert gas .....	Recharge or replace recharge or replace cylinder if cylinder pressure loss exceeds 5% of specified gauge pressure, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed inert extinguishers must be tested or renewed as required by 46 CFR 147.60 and 147.66.
Water mist .....	Maintain system in accordance with the maintenance instructions in the system manufacturer's design, installation, operation, and maintenance manual.

(b) [Reserved].

88. Revise § 169.564 to read as follows:

**§ 169.564 Fixed extinguishing system, general.**

(a) A fixed carbon dioxide, Halon 1301, or clean agent extinguishing system must be installed to protect the following spaces:

(1) Any vessel machinery or fuel tank space, except where the space is so open to the atmosphere as to make the use of a fixed system ineffective;

(2) Any paint or oil room or similar hazardous space; and

(3) Any galley stove area on a vessel greater than 90 feet in length and certificated for exposed or partially protected water service.

(b) Each fixed extinguishing system must be of an approved carbon dioxide, Halon 1301, halogenated, or clean agent type and installed to the satisfaction of the Officer in Charge, Marine Inspection.

89. Add a new § 169.570 to read as follows:

**§ 169.570 Lockout valves.**

(a) A lockout valve must be provided on any carbon dioxide extinguishing system protecting a space over 6,000 cubic feet in volume or a space 6,000 cubic feet or less in volume that does not have a horizontal escape.

(b) The lockout valve must be a manually operated valve located in the discharge manifold prior to the stop valve or selector valves. When in the closed position, the lockout valve must provide complete isolation of the system from the protected space or spaces, making it impossible for carbon dioxide to discharge in the event of equipment failure during maintenance.

(c) The lockout valve design or locking mechanism must make it obvious whether the valve is open or closed.

(d) A valve is considered a lockout valve if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it.

(e) The lockout valve must be locked in the closed position whenever maintenance is performed on the extinguishing system. The master must

ensure that the lockout valve is locked in the open position when maintenance is complete and the system is returned to operable condition.

(f) Lockout valves added to existing systems must be approved by the Commandant for use in the system.

(g) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the lockout valve requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

90. Add a new § 169.571 to read as follows:

**§ 169.571 Olfactory additives.**

(a) Each carbon dioxide extinguishing system must have an approved odorizing unit to produce the scent of wintergreen, the detection of which will serve as an indication that carbon dioxide gas is present in a protected area and any other area into which the carbon dioxide may migrate.

(b) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

91. Revise § 169.732 to read as follows:

**§ 169.732 Carbon dioxide and clean agent alarms.**

(a) Each carbon dioxide or clean agent fire extinguishing alarm must be conspicuously marked: “WHEN ALARM SOUNDS VACATE AT ONCE. CARBON DIOXIDE OR CLEAN AGENT BEING RELEASED.”

(b) Each entrance to a space storing carbon dioxide cylinders, a space protected by carbon dioxide systems, or any space into which carbon dioxide might migrate must be conspicuously marked as follows:

(1) Spaces storing carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. VENTILATE THE AREA BEFORE ENTERING. A HIGH CONCENTRATION CAN OCCUR IN THIS AREA AND CAN CAUSE SUFFOCATION.”

(2) Spaces protected by carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED,

DO NOT ENTER UNTIL VENTILATED. LOCK-OUT SYSTEM WHEN SERVICING.”

(3) Spaces into which carbon dioxide might migrate—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. DISCHARGE INTO NEARBY SPACE CAN COLLECT HERE. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED VACATE IMMEDIATELY.”

92. Revise § 169.734 to read as follows:

**§ 169.734 Fire extinguishing system controls.**

Each control cabinet or space containing valves or manifolds for the various fire extinguishing systems must be distinctly marked in conspicuous red letters at least 2 inches high: “CARBON DIOXIDE FIRE EXTINGUISHING SYSTEM,” “HALON EXTINGUISHING SYSTEM,” or “CLEAN AGENT EXTINGUISHING SYSTEM,” as appropriate.

**PART 176—INSPECTION AND CERTIFICATION**

93. The authority citation for Part 176 continues to read as follows:

**Authority:** 33 U.S.C. 1321(j); 46 U.S.C. 2103, 3205, 3306, 3307; 49 U.S.C. App. 1804; E.O. 11735, 38 FR 21243, 3 CFR, 1971–1975 Comp., p. 743; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1

94. Revise § 176.810(b)(2) to read as follows:

**§ 176.810 Fire protection.**

\* \* \* \* \*

(b) \* \* \*

(2) For semiportable and fixed gas fire extinguishing systems, the inspections and tests required by Table 176.810(b)(2), in addition to the tests required by 46 CFR 147.60, 147.65, 147.66, and 147.67. The owner or managing operator must provide satisfactory evidence of the required servicing to the marine inspector. If any equipment or record has not been properly maintained, a qualified servicing facility may be required to perform the required inspections, maintenance procedures, and hydrostatic pressure tests.

TABLE 176.810(b)(2)—SEMI-PORTABLE AND FIXED FIRE EXTINGUISHING SYSTEMS

Type system	Test
Carbon dioxide .....	Weigh cylinders. Recharge cylinder if weight loss exceeds 10% of weight of charge. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed carbon dioxide systems must be tested or renewed, as required by 46 CFR 147.60 and 147.65.



TABLE 176.810(b)(2)—SEMI-PORTABLE AND FIXED FIRE EXTINGUISHING SYSTEMS—Continued

Type system	Test
Halon 1301 and halocarbon	Recharge or replace if weight loss exceeds 5% of weight of charge or if cylinder has a pressure gauge, recharge cylinder if pressure loss exceeds 10%, adjusted for temperature. Test time delays, alarms, and ventilation shut-downs with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections to Halon 1301 and halocarbon cylinders must be tested or renewed, as required by 46 CFR 147.60 and 147.65 or 147.67. Note that Halon 1301 system approvals have expired, but that existing systems may be retained if they are in good and serviceable condition to the satisfaction of the Coast Guard inspector.
Dry chemical (cartridge operated).	Examine pressure cartridge and replace if end is punctured or if determined to have leaked or to be in unsuitable condition. Inspect hose and nozzle to see if they are clear. Insert charged cartridge. Ensure dry chemical is free flowing (not caked) and extinguisher contains full charge.
Dry chemical (stored pressure).	See that pressure gauge is in operating range. If not, or if the seal is broken, weigh or otherwise determine that extinguisher is fully charged with dry chemical. Recharge if pressure is low or if dry chemical is needed.
Foam (stored pressure) .....	See that any pressure gauge is in the operating range. If not, or if the seal is broken, weigh or otherwise determine that extinguisher is fully charged with foam. Recharge if pressure is low or if foam is needed. Replace premixed agent every 3 years.
Inert gas .....	Recharge or replace cylinder if cylinder pressure loss exceeds 5% of specified gauge pressure, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed inert extinguishers must be tested or renewed as required by 46 CFR 147.60 and 147.66.
Water mist .....	Maintain system in accordance with the maintenance instructions in the system manufacturer's design, installation, operation, and maintenance manual.

\* \* \* \* \*

**PART 181—FIRE PROTECTION EQUIPMENT**

95. The authority citation for Part 181 continues to read as follows:

**Authority:** 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

96. Amend § 181.410, to revise paragraph (c)(7) and add paragraphs (f)(7) to (15) to read as follows:

**§ 181.410 Fixed gas fire extinguishing systems.**

\* \* \* \* \*

(c) \* \* \*

(7) A Halon 1301 storage cylinder must be stowed in an upright position unless otherwise listed by the independent laboratory. A carbon dioxide cylinder may not be inclined more than 30° from the vertical unless fitted with flexible or bent siphon tubes, in which case it may be inclined not more than 80° from the vertical. Cylinders for clean agent systems must be installed in an upright position unless otherwise specified in the system's instruction manual.

\* \* \* \* \*

(f) \* \* \*

(7) A lockout valve must be provided on any carbon dioxide extinguishing system protecting a space over 6,000 cubic feet in volume or a space 6,000 cubic feet or less in volume that does not have a horizontal escape.

(8) The lockout valve must be a manually operated valve located in the

discharge manifold prior to the stop valve or selector valves. When in the closed position, the lockout valve must provide complete isolation of the system from the protected space or spaces, making it impossible for carbon dioxide to discharge in the event of equipment failure during maintenance.

(9) The lockout valve design or locking mechanism must make it obvious whether the valve is open or closed.

(10) A valve is considered a lockout valve if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it.

(11) The lockout valve must be locked in the closed position whenever maintenance is performed on the extinguishing system. The master must ensure that the lockout valve is locked in the open position when maintenance is complete and the system is returned to operable condition.

(12) Lockout valves added to existing systems must be approved by the Commandant for use in the system.

(13) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the lockout valve requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

(14) Each carbon dioxide extinguishing system must have an approved odorizing unit to produce the scent of wintergreen, the detection of which will serve as an indication that carbon dioxide gas is present in a protected area and any other area into which the carbon dioxide may migrate.

(15) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

\* \* \* \* \*

**PART 182—MACHINERY INSTALLATION**

97. The authority citation for Part 182 continues to read as follows:

**Authority:** 46 U.S.C. 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

98. Revise § 182.710(a)(3) to read as follows:

**§ 182.710 Piping for vital systems.**

(a) \* \* \*

(3) Carbon dioxide, Halon 1301, and clean agent systems;

\* \* \* \* \*

**PART 185—OPERATIONS**

99. The authority citation for Part 185 continues to read as follows:

**Authority:** 46 U.S.C. 2103, 3306, 6101; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

100. Amend § 185.612, to revise paragraph (f) and to add a paragraph (g) to read as follows:

**§ 185.612 Fire protection equipment.**

\* \* \* \* \*

(f) The control cabinets or spaces containing valves, manifolds or controls for the various fire extinguishing

systems must be marked in conspicuous red letters at least 2 inches high: “[STEAM/CARBON DIOXIDE/CLEAN AGENT/FOAM/WATER SPRAY—as appropriate] FIRE APPARATUS.”

(g) Each entrance to a space storing carbon dioxide cylinders, a space protected by carbon dioxide systems, or any space into which carbon dioxide might migrate must be conspicuously marked as follows:

(1) Spaces storing carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. VENTILATE THE AREA BEFORE ENTERING. A HIGH CONCENTRATION CAN OCCUR IN THIS AREA AND CAN CAUSE SUFFOCATION.”

(2) Spaces protected by carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED, DO NOT ENTER UNTIL VENTILATED. LOCK-OUT SYSTEM WHEN SERVICING.”

(3) Spaces into which carbon dioxide might migrate—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. DISCHARGE INTO NEARBY SPACE CAN COLLECT HERE. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED VACATE IMMEDIATELY.”

**PART 189—INSPECTION AND CERTIFICATION**

101. The authority citation for Part 189 continues to read as follows:

**Authority:** 33 U.S.C. 1321(j); 46 U.S.C. 2113, 3306, 3307; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp., p. 351; Department of Homeland Security Delegation No. 0170.1.

102. In § 189.25–20, revise the section heading and Table 189.25–20(a)(2) to read as follows:

**§ 189.25–20 Fire extinguishing equipment.**  
\* \* \* \* \*

TABLE 189.25–20(a)(2)

Type system	Test
Foam .....	Systems utilizing a soda solution must have such solution replaced. In all cases, ascertain that powder is not caked.
Carbon dioxide .....	Weigh cylinders. Recharge cylinder if weight loss exceeds 10% of weight of charge. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer’s instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed carbon dioxide systems must be tested or renewed, as required by 46 CFR 147.60 and 147.65.
Halon 1301 or halocarbon ...	Recharge or replace if weight loss exceeds 5% of weight of charge or if cylinder has a pressure gauge, recharge cylinder if pressure loss exceeds 10%, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer’s instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections to Halon 1301 and halocarbon cylinders must be tested or renewed, as required by 46 CFR 147.60 and 147.65 or 147.67. Note that Halon 1301 system approvals have expired, but that existing systems may be retained if they are in good and serviceable condition to the satisfaction of the Coast Guard inspector.
Inert gas .....	Recharge or replace cylinder if cylinder pressure loss exceeds 5% of specified gauge pressure, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer’s instruction manual. Inspect hoses for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed inert extinguishers must be tested or renewed as required by 46 CFR 147.60 and 147.66.
Water mist .....	Maintain system in accordance with the maintenance instructions in the system manufacturer’s design, installation, operation, and maintenance manual.

\* \* \* \* \*  
103. Revise § 189.55–5(d)(4) to read as follows:

**§ 189.55–5 Plans and specifications required for new construction.**

\* \* \* \* \*

(d) \* \* \*

(4) Details of extinguishing systems, including fire mains, carbon dioxide, clean agent, foam, and sprinkling systems.

\* \* \* \* \*

**PART 190—CONSTRUCTION AND ARRANGEMENT**

104. The authority citation for Part 190 continues to read as follows:

**Authority:** 46 U.S.C. 2113, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

105. Revise § 190.15–5(i) to read as follows:

**§ 190.15–5 Vessels using fuel having a flashpoint of 110°F or lower.**

\* \* \* \* \*

(i) Provisions must be made for closing all cowls or scoops when the fixed carbon dioxide or clean agent system is operated.

**PART 193—FIRE PROTECTION EQUIPMENT**

106. The authority citation for Part 193 continues to read as follows:

**Authority:** 46 U.S.C. 2213, 3102, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

107. Revise § 193.05–10 to read as follows:

**§ 193.05–10 Fixed fire extinguishing systems.**

(a) Approved fire extinguishing systems must be installed in all lamp and paint lockers, oil rooms, and similar spaces.

(b) A fixed carbon dioxide or clean agent fire extinguishing system complying with 46 CFR subparts 95.15 and 95.16 must be installed for:

- (1) Internal combustion engine installations;
- (2) Gas turbine installations;
- (3) Enclosed spaces containing gasoline engines;
- (4) Chemical storerooms;

(5) Any space containing auxiliaries with an aggregate power of 1,000 brake horsepower (b.h.p.) or greater, or their fuel oil units, including purifiers, valves, and manifolds, on vessels of 1,000 gross tons and over; and

(6) Enclosed ventilating systems installed for electric propulsion motors or generators.

(c) On vessels of 1,000 gross tons and over, a fixed carbon dioxide or clean agent fire extinguishing system complying with 46 CFR subparts 95.15 and 95.16 or a foam system complying with 46 CFR subpart 95.17 must be installed for any space containing main or auxiliary oil fired boilers or their associated fuel oil units, valves, or manifolds in the line between the settling tanks and the boilers.

(d) Systems for spaces containing explosives and other dangerous articles or substances must also comply with 46 CFR Part 194.

108. In § 193.10–5, revise the section heading and paragraph (h) to read as follows:

**§ 193.10–5 Fire main system, details.**

\* \* \* \* \*

(h) On vessels with main or auxiliary oil fired boilers or vessels with internal combustion propulsion machinery, when two fire pumps are required, the boilers or machinery must be located in separate spaces, and the arrangement, pumps, sea connections, and sources of power must be such as to ensure that a fire in any one space will not put all of the fire pumps out of operation. However, when it is shown to the satisfaction of the Commandant that it is unreasonable or impracticable to meet this requirement due to the size or arrangement of the vessel, or for other reasons, the installation of a total flooding system using carbon dioxide or a clean agent complying with 46 CFR subpart 95.16 may be accepted as an alternate method of extinguishing any fire that could affect the powering and operation for the required fire pumps.

\* \* \* \* \*

109. Revise the heading to subpart 193.15 to read as follows:

**Subpart 193.15—Carbon Dioxide and Clean Agent Extinguishing Systems, Details**

110. Add a new § 193.15–16 to read as follows:

**§ 193.15–16 Lockout valves.**

(a) A lockout valve must be provided on any carbon dioxide extinguishing system protecting a space over 6,000 cubic feet in volume or a space 6,000 cubic feet or less in volume that does not have a horizontal escape.

(b) The lockout valve must be a manually operated valve located in the discharge manifold prior to the stop valve or selector valves. When in the closed position, the lockout valve must

provide complete isolation of the system from the protected space or spaces, making it impossible for carbon dioxide to discharge in the event of equipment failure during maintenance.

(c) The lockout valve design or locking mechanism must make it obvious whether the valve is open or closed.

(d) A valve is considered a lockout valve if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it.

(e) The lockout valve must be locked in the closed position whenever maintenance is performed on the extinguishing system. The master must ensure that the lockout valve is locked in the open position when maintenance is complete and the system is returned to operable condition.

(f) Lockout valves added to existing systems must be approved by the Commandant for use in the system.

(g) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the lockout valve requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

111. Add a new § 193.15–17 to read as follows:

**§ 193.15–17 Olfactory additives.**

(a) Each carbon dioxide extinguishing system must have an approved odorizing unit to produce the scent of wintergreen, the detection of which will serve as an indication that carbon dioxide gas is present in a protected area and any other area into which the carbon dioxide may migrate.

(b) Vessels in operation on [EFFECTIVE DATE OF RULE] must comply with the requirements of this section not later than [DATE 5 YEARS AFTER EFFECTIVE DATE OF RULE].

112. Add a new § 193.15–50 to read as follows:

**§ 193.15–50 Clean agent systems.**

A clean agent system complying with 46 CFR subpart 95.16 may be used as an alternative to a carbon dioxide fire extinguishing system.

**PART 194—HANDLING, USE, AND CONTROL OF EXPLOSIVES AND OTHER HAZARDOUS MATERIALS**

113. The authority citation for Part 194 continues to read as follows:

**Authority:** 46 U.S.C. 2103, 2113, 3306; 49 U.S.C. App. 1804; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

114. Revise § 194.20–7(a) to read as follows:

**§ 194.20–7 Fire protection.**

(a) Each chemical storeroom must be protected by a fixed automatic extinguishing system using carbon dioxide or a clean agent complying with 46 CFR subpart 95.16, installed in accordance with 46 CFR subpart 193.15.

\* \* \* \* \*

**PART 196—OPERATIONS**

115. The authority citation for Part 196 continues to read as follows:

**Authority:** 33 U.S.C. 1321(j); 46 U.S.C. 2213, 3306, 5115, 6101; E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp., p. 351; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

116. Add a new § 196.37–8 to read as follows:

**§ 196.37–8 Carbon dioxide warnings.**

Each entrance to a space storing carbon dioxide cylinders, a space protected by carbon dioxide systems, or any space into which carbon dioxide might migrate must be conspicuously marked as follows:

(a) Spaces storing carbon dioxide—  
“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. VENTILATE THE AREA BEFORE ENTERING. A HIGH CONCENTRATION CAN OCCUR IN THIS AREA AND CAN CAUSE SUFFOCATION.”

(b) Spaces protected by carbon dioxide—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED, DO NOT ENTER UNTIL VENTILATED. LOCK-OUT SYSTEM WHEN SERVICING.”

(c) Spaces into which carbon dioxide might migrate—“CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. DISCHARGE INTO NEARBY SPACE CAN COLLECT HERE. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED VACATE IMMEDIATELY.”

117. Revise § 196.37–9 to read as follows:

**§ 196.37–9 Carbon dioxide and clean agent alarms.**

Each extinguishing system using carbon dioxide or clean agent complying with 46 CFR subpart 95.16 must be conspicuously marked in an adjacent location: “WHEN ALARM SOUNDS VACATE AT ONCE. CARBON DIOXIDE OR CLEAN AGENT BEING RELEASED.”

118. Revise § 196.37–13 to read as follows:

**§ 196.37–13 Fire extinguishing system controls.**

The control cabinets or spaces containing valves, manifolds or controls for the various fire extinguishing

systems must be marked in conspicuous red letters at least 2 inches high: “[CARBON DIOXIDE/CLEAN AGENT/FOAM—as appropriate] FIRE APPARATUS.”

Dated: February 12, 2010.

**J.G. Lantz,**

*Director of Commercial Regulations and Standards.*

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