SUBCHAPTER M—TOWING VESSELS

PART 140—OPERATIONS

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Subpart A—General

§ 140.100 Purpose.

This part contains the health, safety, and operational requirements for towing vessels and the crewmembers serving onboard them.

§ 140.105 Applicability and delayed implementation for existing vessels.

This part applies to all towing vessels subject to this subchapter.

(a) With the exception § 140.500, which has a later implementation date, an existing towing vessel must comply with the requirements in this part no later than either July 20, 2018 or the date the vessel obtains a Certificate of Inspection (COI), whichever date is earlier.

(b) The delayed implementation provisions in paragraph (a) of this section do not apply to a new towing vessel.

Subpart B—General Operational Safety

§ 140.205 General vessel operation.

(a) A vessel must be operated in accordance with applicable laws and regulations and in such a manner as to afford protection against hazards to life, property, and the environment.

(b) Towing vessels with a Towing Safety Management System (TSMS) must be operated in accordance with the TSMS applicable to the vessel.

(c) Vessels must be manned in accordance with the COI. Manning requirements are contained in part 15 of this chapter.

(d) Each crewmember that is required to hold a Merchant Mariner Credential (MMC) must have the credential on board and available for examination at all times when the vessel is operating.

(e) All individuals who are not required to hold an MMC permitted onboard the vessel must have and present on request a valid personal identification that meets the requirements set forth in 33 CFR 101.515.

§ 140.210 Responsibilities of the master and crew.

(a) The safety of the towing vessel is the responsibility of the master and includes:

(1) Adherence to the provisions of the COI;

(2) Compliance with the applicable provisions of this subchapter;

(3) Compliance with the TSMS, if one is applicable to the vessel; and

(4) Supervision of all persons onboard in carrying out their assigned duties.

(b) If the master or officer in charge of a navigational watch believes it is unsafe for the vessel to proceed, that an operation endangers the vessel or crew, or that an unsafe condition exists, he or she must ensure that adequate corrective action is taken and must not proceed until it is safe to do so.

(c) Nothing in this subpart may be construed in a manner which limits the master or officer in charge of a navigational watch, at his or her own responsibility, from diverting from the route prescribed in the COI or taking such steps as deemed necessary and prudent to assist vessels in distress or for other emergency conditions.

(d) It is the responsibility of the crew to:

(1) Adhere to the provisions of the COI;

(2) Comply with the applicable provisions of this subchapter;

(3) Comply with the TSMS, if one is applicable to the vessel;

(4) Ensure that the master or officer in charge of a navigational watch is made aware of all known aspects of the condition of the vessel, including:

(i) Those vessels being pushed, pulled, or hauled alongside; and

(ii) Equipment and other accessories used for pushing, pulling, or hauling alongside other vessels.

(5) Minimize any distraction from the operation of the vessel or performance of duty; and

(6) Report unsafe conditions to the master or officer in charge of a navigational watch and take effective action to prevent accidents.

Subpart C—[Reserved]

Subpart D—Crew Safety

§ 140.400 Personnel records.

(a) The master of each towing vessel must keep an accurate list of crewmembers and their assigned positions and responsibilities aboard the vessel.

(b) The master must keep an accurate list of individuals to be carried as persons in addition to the crew and any passengers.

(c) The date and time that a navigation watchstander, including master, officer in charge of a navigational watch, and lookout assumes a watch and is relieved of a watch must be recorded in the towing vessel record (TVR), official logbook, or in accordance with the TSMS applicable to the vessel. If an engineering watch is maintained, comparable records documenting the engineering watch are required.

§ 140.405 Emergency duties and duty stations.

(a) Crewmembers must meet the requirements in §§15.405 and 15.1105 of this chapter, as appropriate.

(b) Any towing vessel with alternating watches (shift work) or overnight accommodations must identify the duties and duty stations of each person onboard during an emergency, including:

(1) Responding to fires and flooding;

(2) Responding to emergencies that necessitate abandoning the vessel;

(3) Launching survival craft;

(4) Taking action during heavy weather;

(5) Taking action in the event of a person overboard;

(6) Taking action relative to the tow;

(7) Taking action in the event of failure of propulsion, steering, or control system;

(8) Managing individuals onboard who are not crewmembers;

(9) Managing any other event or condition which poses a threat to life, property, or the environment; and

(10) Responding to other special duties essential to addressing emergencies as determined by the TSMS applicable to the vessel, if a TSMS is used.

(c) The emergency duties and duty stations required by this section must be posted at each operating station and in a conspicuous location in a space commonly visited by crewmembers. If posting is impractical, such as in an open boat, they may be kept onboard in a location readily available to the crew.

§ 140.410 Safety orientation.

(a) Personnel must meet the requirements in §§15.405 and 15.1105 of this chapter, as appropriate.

(b) Prior to getting underway for the first time on a particular towing vessel, each crewmember must receive a safety orientation on:

(1) His or her duties in an emergency;

(2) The location, operation, and use of lifesaving equipment;

(3) Prevention of falls overboard;

(4) Personal safety measures;

(5) The location, operation, and use of Personal Protective Equipment;

(6) Emergency egress procedures;

(7) The use and operation of watertight and weathertight closures;

(8) Responsibilities to provide assistance to individuals that are not crewmembers;

(9) How to respond to emergencies relative to the tow; and

(10) Awareness of, and expected response to, any other hazards inherent to the operation of the towing vessel which may pose a threat to life, property, or the environment.

(c) The safety orientation provided to crewmembers who received a safety orientation on another vessel may be modified to cover only those areas unique to the other vessel on which service will occur.

(d) Safety orientations and other crew training must be documented in the TVR, official logbook, or in accordance with the TSMS applicable to the vessel. The entry must include:

(1) The date of the safety orientation or training;

(2) A general description of the safety orientation or training topics;

(3) The name(s) and signature(s) of individual(s) providing the orientation or training; and

(4) The name(s) of the individual(s) receiving the safety orientation or training.

§ 140.415 Orientation for individuals that are not crewmembers.

Individuals, who are not crewmembers, on board a towing vessel must receive a safety orientation prior to getting underway or as soon as practicable thereafter, to include:

(a) The location, operation, and use of lifesaving equipment;

(b) Emergency procedures;

(c) Methods to notify crewmembers in the event of an emergency; and

(d) Prevention of falls overboard.

§ 140.420 Emergency drills and instruction.

(a) *Master's responsibilities.* The master of a towing vessel must ensure that drills are conducted and instructions are given to ensure that all crewmembers are capable of performing the duties expected of them during emergencies. This includes abandoning the vessel, recovering persons from the water, responding to onboard fires and flooding, or responding to other threats to life, property, or the environment.

(b) *Nature of drills.* Each drill must, as far as practicable, be conducted as if there was an actual emergency.

(c) *Annual instruction for each crew member*. Unless otherwise stated, each crewmember must receive the instruction required by this section annually.

(d) *Instructions and drills required*. The following instruction and drills are required:

(1) Response to fires, as required by §142.245 of this subchapter;

(2) Launching of a skiff, if listed as an item of emergency equipment to abandon ship or recover a person-overboard;

(3) Instruction on the use of davit-launched liferafts, if installed.

(4) If a rescue boat is installed, instruction on how it must be launched, with its assigned crew aboard, and maneuvered in the water as if during an actual man-overboard situation.

(5) Credentialed mariners holding an officer endorsement do not require instruction in accordance with paragraphs (d)(1), (3), and (4) of this section.

(e) *Alternative forms of instruction*. (1) Instruction as required by this section may be conducted via an electronic format followed by a discussion and demonstration by a competent individual. This instruction may occur either on board or off the vessel but must include the equipment that is the subject of the instruction.

(2) Instruction as required by this section may be performed in accordance with the TSMS applicable to the vessel, provided that it meets the minimum requirements of this section.

(f) *Location of drills, full crew participation, and use of equipment*. As far as practicable, drills must take place on board the vessel. They must include:

(1) Participation by all crewmembers; and

(2) Actual use of, or realistic simulation of the use of, emergency equipment.

(g) *Recordkeeping*. Records of drills and instruction must be maintained in the TVR, official logbook, or in accordance with the TSMS applicable to the vessel. The record must include:

(1) The date of the drill and instruction;

(2) A description of the drill scenario and instruction topics;

(3) The personnel involved.

§140.425 Fall overboard prevention.

(a) The owner or managing operator of a towing vessel must establish procedures to address fall overboard prevention and recovery of persons in the water, including, but not limited to:

(1) Personal protective equipment;

(2) Safely working on the tow;

(3) Safety while line handling;

(4) Safely moving between the vessel and a tow, pier, structure, or other vessel; and

(5) Use of retrieval equipment.

(b) The owner, managing operator, or master must ensure that all persons on board comply with the policies and procedures in this section.

§140.430 Wearing of work vests.

(a) Personnel dispatched from the vessel or that are working in an area on the exterior of the vessel without rails and guards must wear a lifejacket meeting requirements in 46 CFR 141.340, an immersion suit meeting requirements in 46 CFR 141.350, or a work vest approved by the Commandant under 46 CFR subpart 160.053. When worn at night, the work vest must be equipped with a light that meets the requirements of 46 CFR 141.340(g)(1). Work vests may not be substituted for the lifejackets required by 46 CFR part 141.

(b) Each storage container containing a work vest must be marked ''WORK VEST''.

§140.435 First aid equipment.

Each towing vessel must be equipped with an industrial type first aid cabinet or kit, appropriate to the size of the crew and operating conditions. Each towing vessel operating on oceans, coastwise, or Great Lakes routes must have a means to take blood pressure readings, splint broken bones, and apply large bandages for serious wounds.

Subpart E—Safety and Health

§140.500 General.

(a) No later than July 22, 2019, the owner or managing operator must implement a health and safety plan. The health and safety plan must document

compliance with this part and include recordkeeping procedures.

(b) The owner, managing operator, or master must ensure that all persons on board a towing vessel comply with the health and safety plan.

§ 140.505 General health and safety requirements.

(a) The owner or managing operator must implement procedures for reporting unsafe conditions and must have records of the activities conducted under this section. The owner or managing operator must maintain records of health and safety incidents that occur on board the vessel, including any medical records associated with the incidents. Upon request, the owner or managing operator must provide crewmembers with incident reports and the crewmember's own associated medical records.

(b) All vessel equipment must be used in accordance with the manufacturer's recommended practice and in a manner that minimizes risk of injury or death. This includes machinery, deck machinery, towing gear, ladders, embarkation devices, cranes, portable tools, and safety equipment.

(c) All machinery and equipment that is not in proper working order (including missing or malfunctioning guards or safety devices) must be removed; made safe through marking, tagging, or covering; or otherwise made unusable.

(d) *Personal Protective Equipment (PPE).* (1) Appropriate Personal Protective Equipment (PPE) must be made available and on hand for all personnel engaged in an activity that requires the use of PPE.

(2) PPE must be suitable for the vessel's intended service; meet the standards of 29 CFR part 1910, subpart I; and be used, cleaned, maintained, and repaired in accordance with manufacturer's requirements.

(3) All individuals must wear PPE appropriate to the activity being performed;

(4) All personnel engaged in an activity must be trained in the proper use, limitations, and care of the PPE specified by this subpart;

(e) The vessel, including crew's quarters and the galley, must be kept in a sanitary condition.

§ 140.510 Identification and mitigation of health and safety hazards.

(a) The owner or managing operator must implement procedures to identify and mitigate health and safety hazards, including but not limited to:

(1) Tools and equipment, including deck machinery, rigging, welding and cutting, hand tools, ladders, and abrasive wheel machinery found on board the vessel;

(2) Slips, trips, and falls;

(3) Working aloft;

(4) Hazardous materials;

(5) Confined space entry;

(6) Blood-borne pathogens and other biological hazards;

(7) Electrical;

(8) Noise;

(9) Falls overboard;

(10) Vessel embarkation and disembarkation (including pilot transfers);

(11) Towing gear, including winches, capstans, wires, hawsers and other related equipment;

(12) Personal hygiene;

(13) Sanitation and safe food handling; and

(14) Potable water supply.

(b) As far as practicable, the owner or managing operator must implement other types of safety control measures before relying on Personal Protective Equipment. These controls may include administrative, engineering, source modification, substitution, process change or controls, isolation, ventilation, or other controls.

§ 140.515 Training requirements.

(a) All crewmembers must be provided with health and safety information and training that includes:

(1) Content and procedures of the owner or managing operator's health and safety plan;

(2) Procedures for reporting unsafe conditions;

(3) Proper selection and use of PPE appropriate to the vessel operation;

(4) Safe use of equipment including deck machinery, rigging, welding and cutting, hand tools, ladders, and abrasive wheel machinery found onboard the vessel;

(5) Hazard communication and cargo knowledge;
(6) Safe use and storage of hazardous materials and chemicals;
(7) Confined space entry;
(8) Respiratory protection; and
(9) Lockout/Tagout procedures.
(b) Individuals, other than crewmembers, must be provided with sufficient information or training on hazards relevant to their potential exposure on or around the vessel.
(c) Crewmember training required by this section must be conducted as soon as practicable, but not later than 5 days after employment.
(d) Refresher training must be repeated annually and may be conducted over time in modules covering specific topics. Refresher training may be less comprehensive, provided that the information presented is sufficient to provide employees with continued understanding of workplace hazards. The refresher training of persons subject to this subpart must include the information and training prescribed in this section.
(e) The owner, managing operator, or master must determine the appropriate training and information to provide to each individual permitted on the vessel who is not a crewmember, relative to the expected risk exposure of the individual.
(f) All training required in this section must be documented in owner or managing operator's records.

Subpart F—Vessel Operational Safety

§ 140.600 Applicability.

This subpart applies to all towing vessels unless otherwise specified. Certain vessels remain subject to the navigation safety regulations in 33 CFR part 164.

§ 140.605 Vessel stability.

(a) Prior to getting underway, and at all other times necessary to ensure the safety of the vessel, the master or officer in charge of a navigational watch must determine whether the vessel complies with all stability requirements in the vessel's trim and stability book, stability letter, COI, and Load Line Certificate, as applicable.
(b) A towing vessel must be maintained and operated so the watertight integrity and stability of the vessel are not compromised.

§ 140.610 Hatches and other openings.

(a) All towing vessels must be operated in a manner that minimizes the risk of down-flooding and progressive flooding.
(b) The master must ensure that all hatches, doors, and other openings designed to be watertight or weathertight function properly.
(c) The master or officer in charge of a navigational watch must ensure all hatches and openings of the hull and deck are kept tightly closed except:
(1) When access is needed through the opening for transit;
(2) When operating on rivers with a tow, if the master determines the safety of the vessel is not compromised; or
(3) When operating on lakes, bays, and sounds, without a tow during calm weather, and only if the master determines that the safety of the vessel is not compromised.
(d) Where installed, all watertight doors in watertight bulkheads must be closed during the operation of the vessel, unless they are being used for transit between compartments; and
(e) When downstreaming, all exterior openings at the main deck level must be closed.
(f) Decks and bulkheads designed to be watertight or weathertight must be maintained in that condition.

§ 140.615 Examinations and tests.

(a) This section applies to a towing vessel not subject to 33 CFR 164.80.
(b) Prior to getting underway, the master or officer in charge of a navigational watch of the vessel must examine and test the steering gear, signaling whistle, propulsion control, towing gear, navigation lights, navigation equipment, and communication systems of the vessel. This examination and testing does not need to be conducted more than once in any 24-hour period.
(c) The results of the examination and testing must be recorded in the TVR, official logbook, or in accordance with the TSMS applicable to the vessel.

§ 140.620 Navigational safety equipment.

(a) This section applies to a towing vessel not subject to the requirements of 33 CFR 164.82.

(b) The owner, managing operator, or master of each towing vessel must maintain the required navigational-safety equipment in a fully-functioning, operational condition.

(c) Navigational safety equipment such as radar, gyrocompass, echo depth-sounding or other sounding device, automatic dependent surveillance equipment, or navigational lighting that fails during a voyage must be repaired at the earliest practicable time. The owner, managing operator, or master must consider the state of the equipment (along with such factors as weather, visibility, traffic, and the dictates of good seamanship) when deciding whether it is safe for the vessel to proceed.

(d) The failure and subsequent repair or replacement of navigational safety equipment must be recorded. The record must be made in the TVR, official logbook, or in accordance with the TSMS applicable to the vessel.

§ 140.625 Navigation underway.

(a) At all times, the movement of a towing vessel and its tow must be under the direction and control of a master or mate (pilot) properly licensed under subchapter B of this chapter.

(b) The master or officer in charge of a navigational watch must operate the vessel in accordance with the conditions and restrictions stated on the COI and the TSMS applicable to the vessel.

Note to § 140.625. Certain towing vessels subject to § 140.625 are also subject to the requirements of 33 CFR 164.78.

§ 140.630 Lookout.

(a) Throughout the trip or voyage the master and officer in charge of the navigational watch must assess the requirement for a lookout, consistent with 33 CFR 83.05. A lookout in addition to the master or mate (pilot) should be added when necessary to:

(1) Maintain a state of vigilance with regard to any significant change in the operational environment;

(2) Assess the situation and the risk of collision/allision;

(3) Anticipate stranding and other dangers to navigation; and

(4) Detect any other potential hazards to safe navigation.

(b) In determining the requirement for a lookout, the officer in charge of the navigational watch must take full account of relevant factors including, but not limited to: state of weather, visibility, traffic density, proximity of dangers to navigation, and the attention necessary when navigating in areas of increased vessel traffic.

§ 140.635 Navigation assessment.

(a) The officer in charge of a navigational watch must conduct a navigation assessment for the intended route and operations prior to getting underway. The navigation assessment must incorporate the requirements of pilothouse resource management of § 140.640, assess operational risks, and anticipate and manage workload demands. At a minimum, this assessment must consider:

(1) The velocity and direction of currents in the area being transited;

(2) Water depth, river stage, and tidal state along the route and at mooring location;

(3) Prevailing visibility and weather conditions and changes anticipated along the intended route;

(4) Density (actual and anticipated) of marine traffic;

(5) The operational status of pilothouse instrumentation and controls, to include alarms, communication systems, variation and deviation errors of the compass, and any known nonconformities or deficiencies;

(6) Air draft relative to bridges and overhead obstructions taking tide and river stage into consideration;

(7) Horizontal clearance, to include bridge transits;

(8) Lock transits;

(9) Navigation hazards such as logs, wrecks or other obstructions in the water;

(10) Any broadcast notice to mariners, safety or security zones or special navigation areas;

(11) Configuration of the vessel and tow, including handling characteristics, field of vision from the pilothouse, and activities taking place onboard;

(12) The knowledge, qualifications, and limitations of crewmembers who are assigned as members on watch and the experience and familiarity of crewmembers with the towing vessels particulars and equipment; and

(13) Any special conditions not covered above that impact the safety of navigation.

(b) The officer in charge of a navigational watch must keep the navigation assessment up-to-date to reflect changes in conditions and circumstances. This includes updates during the voyage or trip as necessary. At each change of the navigational watch, the oncoming officer in charge of the navigational watch must review the current navigation assessment for necessary changes.

(c) The officer in charge of a navigational watch must ensure that the navigation assessment and any updates are communicated to other members of the navigational watch.

(d) A navigation assessment entry must be recorded in the TVR, official log, or in accordance with the TSMS applicable to the vessel. The entry must include the date and time of the assessment, the name of the individual making the assessment, and the starting and ending points of the voyage or trip that the assessment covers.

Note to §140.635. Certain towing vessels subject to §140.635 are also subject to the voyage planning requirements of 33 CFR 164.80.

§140.640 Pilothouse resource management.

(a) The officer in charge of a navigational watch must:

(1) Ensure that other members of the navigational watch have a working knowledge of the navigation assessment required by §140.635, and understand the chain of command, the decision-making process, and the fact that information sharing is critical to the safety of the vessel.

(2) Ensure that the navigation assessment required by §140.635 is complete, updated, communicated and available throughout the trip.

(3) Ensure that watch change procedures incorporate all items listed in paragraph (a)(1) of this section.

(4) Take actions (to include delaying watch change or pausing the voyage) if there is reasonable cause to believe that an oncoming watchstander is not immediately capable of carrying out his or her duties effectively.

(5) Maintain situational awareness and minimize distractions.

(b) Prior to assuming duties as officer in charge of a navigational watch, a person must:

(1) Complete the navigation assessment required by §140.635;

(2) Verify the operational condition of the towing vessel; and

(3) Verify that there are adequate personnel available to assume the watch.

(c) If at any time the officer in charge of a navigational watch is to be relieved when a maneuver or other action to avoid any hazard is taking place, the relief of that officer in charge of a navigational watch must be deferred until such action has been completed.

§140.645 Navigation safety training.

(a) Prior to assuming duties related to the safe operation of a towing vessel, each crewmember must receive training to ensure that they are familiar with:

(1) Watchstanding terms and definitions;

(2) Duties of a lookout;

(3) Communication with other watchstanders;

(4) Change of watch procedures;

(5) Procedures for reporting other vessels or objects; and

(6) Watchstanding safety.

(b) Crewmember training must be recorded in the TVR, official logbook, or in accordance with the TSMS applicable to the vessel.

(c) Credentialed mariners holding Able Seaman or officer endorsements will be deemed to have met the training requirements in this section.

§140.650 Operational readiness of lifesaving and fire suppression and detection equipment.

The owner, managing operator, or master of a towing vessel must ensure

that the vessel's lifesaving and fire suppression and detection equipment complies with the applicable requirements of parts 141 and 142 of this subchapter and is in good working order.

§ 140.655 Prevention of oil and garbage pollution.

(a) Each towing vessel must be operated in compliance with:

(1) Applicable sections of the Federal Water Pollution Control Act, including section 311 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1321);

(2) Applicable sections of the Act to Prevent Pollution from Ships (33 U.S.C. 1901 *et seq.*); and

(3) Parts 151, 155, and 156, of 33 CFR, as applicable.

(b) Each towing vessel must be capable of preventing all oil spills from reaching the water during transfers by:

(1) Pre-closing the scuppers/freeing ports, if the towing vessel is so equipped;

(2) Using fixed or portable containment of sufficient capacity to contain the most likely spill, if 33 CFR 155.320 does not apply; or

(3) Pre-deploying sorbent material on the deck around vents and fills.

(c) No person may intentionally drain oil or hazardous material into the bilge of a towing vessel from any source. For purposes of this section, ''oil'' has the same meaning as ''oil'' defined in 33 U.S.C. 1321.

§ 140.660 Vessel security.

Each towing vessel must be operated in compliance with:

(a) The Maritime Transportation Security Act of 2002 (46 U.S.C. Chapter 701); and

(b) 33 CFR parts 101 and 104, as applicable.

§ 140.665 Inspection and testing required when making alterations, repairs, or other such operations involving riveting, welding, burning, or like fire-producing actions.

(a) The inspections and issuance of certificates required by this section must be conducted in accordance with the provisions of NFPA 306 (incorporated by reference, see §136.112 of this subchapter) before alterations, repairs, or other operations involving riveting, welding, burning, or other fire producing actions may be made aboard a vessel.

(b) Until an inspection has been made to determine that such operation can be undertaken with safety, no alterations, repairs, or other such operations involving riveting, welding, burning, or like fire-producing actions must be made:

(1) Within or on the boundaries of cargo tanks which have been used to carry combustible liquid or chemicals in bulk;

(2) Within or on the boundaries of fuel tanks; or,

(3) To pipe lines, heating coils, pumps, fittings, or other appurtenances connected to such cargo or fuel tanks.

(c) Such inspections must be made and evidenced as follows:

(1) In ports or places in the United States or its territories and possessions the inspection must be made by a marine chemist certificated by the National Fire Protection Association. However, if the services of such certified marine chemist are not reasonably available, the Officer in Charge, Marine Inspection (OCMI), upon the recommendation of the vessel owner and his or her contractor or their representative, must select a person who, in the case of an individual vessel, must be authorized to make such inspection. If the inspection indicated that such operations can be undertaken with safety, a certificate setting forth the fact in writing and qualified as may be required, must be issued by the certified marine chemist or the authorized person before the work is started. Such qualifications must include any requirements as may be deemed necessary to maintain the safe conditions in the spaces certified throughout the operation and must include such additional tests and certifications as considered required. Such qualifications and requirements must include precautions necessary to eliminate or minimize hazards that may be present from protective coatings or residues from cargoes.

(2) When not in such a port or place, and a marine chemist or such person authorized by the OCMI, is not reasonably available, the inspection must be made by the master or person in charge

and a proper entry must be made in the vessel's logbook.

(d) The master or person in charge must secure copies of certificates issued by the certified marine chemist or such person authorized by the OCMI. The master or person in charge must maintain a safe condition on the vessel by full observance of all qualifications and requirements listed by the marine chemist or person authorized by the OCMI in the certificate.

§ 140.670 Use of auto pilot.

Except for towing vessels in compliance with requirements in 33 CFR 164.13(d), when an automatic pilot is used in areas of high traffic density, conditions of restricted visibility, or any other hazardous navigational situations, the master must ensure that:

(a) It is possible to immediately establish manual control of the ship's steering;

(b) A competent person is ready at all times to take over steering control; and

(c) The changeover from automatic to manual steering and vice versa is made by, or under, the supervision of the officer in charge of the navigational watch.

Subpart G—Navigation and Communication Equipment

§ 140.700 Applicability.

This subpart applies to all towing vessels unless otherwise specified. Certain towing vessels are also subject to the navigation safety regulations in 33 CFR part 164.

§ 140.705 Charts and nautical publications.

(a) This section applies to a towing vessel not subject to the requirements of 33 CFR 164.72.

(b) A towing vessel must carry adequate and up-to-date charts, maps, and nautical publications for the intended voyage, including:

(1) Charts, including electronic charts acceptable to the Coast Guard, of appropriate scale to make safe navigation possible. Towing vessels operating on the Western Rivers must have maps of appropriate scale issued by the Army Corps of Engineers or a river authority;

(2) ''U.S. Coast Pilot'' or similar publication;

(3) Coast Guard light list; and

(4) Towing vessels that operate the Western Rivers must have river stage(s) or Water Surface Elevations as appropriate to the trip or route, as published by the U.S. Army Corps of Engineers or a river authority, must be available to the person in charge of the navigation watch.

(c) Extracts or copies from the publications listed in paragraph (b) of this section may be carried, so long as they are applicable to the route.

§ 140.710 Marine radar.

Requirements for marine radar are set forth in 33 CFR 164.72.

§ 140.715 Communications equipment.

(a) Towing vessels must meet the communications requirements of 33 CFR part 26 and 33 CFR 164.72, as applicable.

(b) Towing vessels not subject to the provisions of 33 CFR part 26 or 33 CFR 164.72 must have a Very High Frequency-Frequency Modulated (VHF–FM) radio installed and capable of monitoring VHF–FM Channels 13 and 16, except when transmitting or receiving traffic on other VHF–FM channels, when participating in a Vessel Traffic Service (VTS), or when monitoring a channel of a VTS. The VHF–FM radio must be installed at each operating station and connected to a functioning battery backup.

(c) All towing vessels must have at least one properly operating handheld VHF–FM radio in addition to the radios otherwise required.

§ 140.720 Navigation lights, shapes, and sound signals.

Each towing vessel must be equipped with navigation lights, shapes, and sound signals in accordance with the International Regulations for Prevention of Collisions at Sea (COLREGS) or 33 CFR part 84 as appropriate to its area of operation.

§ 140.725 Additional navigation equipment.

Towing vessels must be equipped with the following equipment, as applicable to the area of operation:

(a) Fathometer (except Western Rivers).

(b) Search light, controllable from the vessel's operating station and capable of illuminating objects at a distance of at least two times the length of the tow.

(c) Electronic position-fixing device, satisfactory for the area in which the vessel operates, if the towing vessel engages in towing seaward of the navigable waters of the U.S. or more than 3 nautical miles from shore on the Great Lakes.

(d) Illuminated magnetic compass or an illuminated swing-meter (Western Rivers vessels only). The compass or swing-meter must be readable from each operating station.

Note to §140.725. Certain towing vessels subject to §140.725 are also subject to the requirements of 33 CFR 164.72 and Automatic Identification System requirements of 33 CFR 164.46.

Subpart H—Towing Safety

§ 140.800 Applicability.

This subpart applies to all towing vessels unless otherwise specified. Certain vessels are also subject to the navigation safety regulations in 33 CFR parts 163 and 164.

§ 140.801 Towing gear.

The owner, managing operator, master or officer in charge of a navigational watch of a towing vessel must ensure the following:

(a) The strength of each component used for securing the towing vessel to the tow and for making up the tow is adequate for its intended service.

(b) The size, material, and condition of towlines, lines, wires, push gear, cables, and other rigging used for making up a tow or securing the towing vessel to a tow must be appropriate for:

(1) The horsepower or bollard pull of the vessel;

(2) The static loads and dynamic loads expected during the intended service;

(3) The environmental conditions expected during the intended service; and

(4) The likelihood of mechanical damage.

(c) Emergency procedures related to the tow have been developed and appropriate training provided to the crew for carrying out their emergency duties.

§ 140.805 Towing safety.

Prior to getting underway, and giving due consideration to the prevailing and expected conditions of the trip or voyage, the officer in charge of the navigational watch for a towing vessel must ensure that:

(a) The barges, vessels, or objects making up the tow are properly configured and secured;

(b) Equipment, cargo, and industrial components on board the tow are properly secured and made ready for transit;

(c) The towing vessel is safely and securely made up to the tow; and

(d) The towing vessel has appropriate horsepower or bollard pull and is capable of safely maneuvering the tow.

§ 140.820 Recordkeeping for towing gear.

(a) The results of the inspections required by 33 CFR 164.76 must be documented in the TVR, official logbook, or in accordance with the TSMS applicable to the vessel.

(b) A record of the type, size, and service of each towline, face wire, and spring line, used to make the towing vessel fast to her tow, must be available to the Coast Guard or third-party auditor for review. The following minimum information is required in the record: The dates when examinations were performed, the identification of each item of towing gear examined, and the name(s) of the person(s) conducting the examinations.

Subpart I—Vessel Records

§ 140.900 Marine casualty reporting.

Each towing vessel must comply with the requirements of part 4 of this chapter for reporting marine casualties and retaining voyage records.

§ 140.905 Official logbooks.

(a) A towing vessel of the United States, except one on a voyage from a port in the United States to a port in Canada, is required by 46 U.S.C. 11301 to have an official logbook if the vessel is:

(1) On a voyage from a port in the United States to a foreign port; or

(2) Of at least 100 gross tons and on a voyage between a port in the United States on the Atlantic Ocean and one on the Pacific Ocean.

(b) The Coast Guard furnishes, without fee, to masters of vessels of the United States, the official logbook as Form CG–706B or CG–706C, depending on the number of persons employed as crew. The first several pages of this logbook list various acts of Congress governing logbooks and the entries required in them.

(c) When a voyage is completed, or after a specified time has elapsed, the master must file the official logbook containing required entries with the cognizant OCMI at or nearest the port where the vessel may be.

§ 140.910 Towing vessel record or record specified by TSMS.

(a) This section applies to a towing vessel other than a vessel operating only in a limited geographic area or a vessel required by § 140.905 to maintain an official logbook.

(b) A towing vessel subject to this section must maintain a TVR or in accordance with the TSMS applicable to the towing vessel.

(c) The TVR must include a chronological record of events as required by this subchapter. The TVR may be electronic or paper.

(d) Except as required by §§ 140.900 and 140.905, records do not need to be filed with the Coast Guard, but must be kept available for review by the Coast Guard upon request. Records, unless required to be maintained for a longer period by statute or other federal regulation, must be retained for at least 1 year after the date of the latest entry.

§ 140.915 Items to be recorded.

(a) The following list of items must be recorded in the TVR, official logbook, or in accordance with the TSMS applicable to the vessel:

(1) Personnel records, in accordance with § 140.400;

(2) Safety orientation, in accordance with § 140.410;

(3) Record of drills and instruction, in accordance with § 140.420;

(4) Examinations and tests, in accordance with § 140.615;

(5) Operative navigational safety equipment, in accordance with § 140.620;

(6) Navigation assessment, in accordance with § 140.635;

(7) Navigation safety training, in accordance with § 140.645;

(8) Oil residue discharges and disposals, in accordance with § 140.655;

(9) Record of inspection of towing gear, in accordance with § 140.820; and

(10) Fire-detection and fixed fire-extinguishing, in accordance with § 142.240.

(b) For the purposes of this subchapter, if items are recorded electronically in a TVR or other record as specified by the TSMS applicable to the towing vessel, these electronic entries must include the date and time of entry and name of the person making the entry. If after an entry has been made, someone responsible for entries determines there is an error in an entry, any entries to correct the error must include the date and time of entry and name of the person making the correction and must preserve a record of the original entry being corrected.

Note to § 140.915. For towing vessels subject to 46 U.S.C. 11301, there are statutory requirements in that U.S. Code section for additional items that must be entered in the official logbook. Regarding requirements outside this subchapter, such as requirements in 33 CFR 151.25 to make entries in an oil record book, § 140.915 does not change those requirements.

Subpart J—Penalties

§ 140.1000 Statutory penalties.

Violations of the provisions of this subchapter will subject the violator to the applicable penalty provisions of Subtitle II of Title 46, and Title 18, United States Code.

§ 140.1005 Suspension and revocation.

An individual is subject to proceedings under the provisions of 46 U.S.C. 7703 and 7704, and part 5 of this chapter with respect to suspension or revocation of a license, certificate, document, or credential if the individual holds a license, certificate of registry, merchant mariner document, or merchant mariner credential and:

(a) Commits an act of misconduct, negligence or incompetence;

(b) Uses or is addicted to a dangerous drug; or

(c) Violates or fails to comply with this subchapter or any other law or regulation intended to promote marine safety; or

(d) Becomes a security risk, as described in 46 U.S.C. 7703.

PART 141—LIFESAVING

Subpart A—General

Subpart B—General Requirements for Towing Vessels

Subpart C—Lifesaving Requirements for Towing Vessels

AUTHORITY: 46 U.S.C. 3103, 3301, 3306, 3308, 3316, 8104, 8904; 33 CFR 1.05; DHS Delegation 0170.1.

SOURCE: USCG–2006–24412, 81 FR 40101, June 20, 2016, unless otherwise noted.

Subpart A—General

§ 141.100 Purpose.

This part contains requirements for lifesaving equipment, arrangements, systems, and procedures on towing vessels.

§ 141.105 Applicability and delayed implementation for existing vessels.

(a) This part applies to all towing vessels subject to this subchapter.

(1) An existing towing vessel must comply with the requirements in this part no later than either July 20, 2018 or the date the vessel obtains a Certificate of Inspection (COI), whichever date is earlier.

(2) The delayed implementation provisions in paragraph (a)(1) of this section do not apply to a new towing vessel.

(b) A towing vessel on an international voyage, subject to SOLAS (incorporated by reference, see § 136.112 of this subchapter), must meet the applicable requirements in subchapter W of this chapter.

(c) Towing vessels in compliance with SOLAS Chapter III will be deemed in compliance with this part.

Subpart B—General Requirements for Towing Vessels

§ 141.200 General provisions.

(a) Unless otherwise specified, all lifesaving equipment must be approved by the Commandant under the approval series specified in each section. Lifesaving equipment for personal use which is not required by this part need not be approved by the Commandant.

(b) A listing of approved equipment and materials may be found at *https://cgmix.uscg.mil/equipment*. Each cognizant Officer in Charge, Marine Inspection (OCMI) may be contacted for information concerning approved equipment and materials.

(c) Equipment requirements are based on the area in which a towing vessel is operating, not the route for

which it is certificated. However, the towing vessel must be equipped per the requirements of its certificated route at the time of certification.

§ 141.225 Alternate arrangements or equipment.

(a) Alternate arrangements or equipment to comply with this part may be approved in accordance with § 136.115 of this subchapter.

(b) If a Towing Safety Management System (TSMS) is applicable to the towing vessel, alternative means for complying with §§ 141.340, 141.350, and 141.360 may be approved by a third-party organization (TPO) and documented in the TSMS applicable to the vessel.

(c) The Coast Guard may approve a novel lifesaving appliance or arrangement as an equivalent if it has performance characteristics at least equivalent to the appliance or arrangement required under this subchapter, and if it has been evaluated and tested under IMO Resolution A.520(13) (incorporated by reference, see § 136.112 of this subchapter). Requests for evaluation of novel lifesaving appliances must be sent to the Commandant (CG–ENG).

(d) The cognizant OCMI may require a towing vessel to carry specialized or additional lifesaving equipment if:

(1) He or she determines that the conditions of the voyage render the requirements of this part inadequate; or

(2) The towing vessel is operated in globally remote areas or severe environments not covered under this part. Such areas may include, but are not limited to, polar regions, remote islands, areas of extreme weather, and other remote areas where timely emergency assistance cannot be anticipated.

§ 141.230 Readiness.

The master must ensure that all lifesaving equipment is properly maintained and ready for use at all times.

§ 141.235 Inspection, testing, and maintenance.

(a) All lifesaving equipment must be tested and maintained in accordance with the minimum requirements of § 199.190 of this chapter, as applicable, and the vessel's TSMS, if the vessel has a TSMS.

(b) Inspections and tests of lifesaving equipment must be recorded in the TVR, official logbook, or in accordance with any TSMS applicable to the vessel. The following minimum information is required:

(1) The dates when inspections and tests were performed, the number or other identification of each unit inspected and tested, the results of the inspections and tests, and the name of the crewmember, surveyor or auditor and any others conducting the inspections and tests; and

(2) Receipts and other records documenting these inspections and tests must be retained for at least 1 year after the expiration of the COI and made available upon request.

§ 141.240 Requirements for training crews.

Training requirements are contained in part 140 of this subchapter.

Subpart C—Lifesaving Requirements for Towing Vessels

§ 141.305 Survival craft requirements for towing vessels.

(a) *General purpose.* Survival craft provide a means for survival when evacuation from the towing vessel is necessary. The craft and related equipment should be selected so as to provide for the basic needs of the crew, such as shelter from life threatening elements, until rescue resources are expected to arrive, taking into account the scope and nature of the towing vessel's operations.

(b) *Functional requirements.* A towing vessel's survival craft must meet the functional requirements of paragraphs (b)(1) through (5) of this section. Functional requirements describe the objectives of the regulation. Survival craft must:

(1) Be readily accessible;

(2) Have an aggregate capacity sufficient to accommodate the total number of individuals onboard, as specified in paragraph (c) of this section;

(3) Provide a means for sheltering its complement appropriate to the route;

(4) Provide minimum equipment for survival if recovery time is expected to be greater than 24 hours; and

(5) Be marked so that an individual not familiar with the operation of the specific survival craft has sufficient guidance to utilize the craft for its intended use.

(c) *Compliance options.* A towing vessel must meet the applicable functional requirements. Compliance with the functional requirements of paragraph (b) of this section may be met by one of these two options:

(1) A towing vessel that meets the prescriptive requirements of paragraph (d) of this section will have complied with the functional requirements; or

(2) If an owner or managing operator chooses to meet the functional requirement through means other than as specified in paragraph (c)(1) of this section, the means must be accepted by the cognizant OCMI or, if the vessel has a TSMS, then by a TPO and, in the latter case, documented in the TSMS applicable to the vessel. The design, testing, and examination scheme for meeting these functional requirements must be included as part of the TSMS applicable to the vessel.

(d) *Prescriptive requirements.* (1) Except as provided in paragraphs (d)(2) through (4) of this section, each towing vessel must carry the survival craft specified in Table 141.305 of this section, as appropriate for the towing vessel, in an aggregate capacity to accommodate the total number of individuals onboard.

TABLE 141.305—SURVIVAL CRAFT

Equipment (approval series)	Area of operation						
	Limited geographic area or protected waters	Rivers	Great Lakes and lakes, bays, and sounds as defined in § 136.110		Coastwise and ltd. coastwise		Oceans
			≤3 miles from shore	>3 miles from shore	≤3 miles from shore	>3 miles from shore	
Cold Water Operation							
Inflatable Buoyant Apparatus (160.010)	None [1]	[2] 100%	[2] 100%	.....	[2] 100%		
Inflatable Liferaft with SOLAS B Pack (160.151)	None [1]	.....	.....	100%	.....	100%	
Inflatable Liferaft with SOLAS A Pack (160.151)	None [1]	.....	.....	.....	.....	.....	100%
Warm Water Operation							
Rigid Buoyant Apparatus (160.010)	None [1]	[2] 100%	[2] 100%	[2] 100%	[2] 100%		
Inflatable Liferaft with SOLAS B Pack (160.151)	None [1]	.....	.....	.....	.....	[3] 100%	
Inflatable Liferaft with SOLAS A Pack (160.151)	None [1]	.....	.....	.....	.....	.....	100%

[1] No survival craft are required unless deemed necessary by the cognizant OCMI or a TSMS applicable to the towing vessel.
[2] A skiff that meets requirements in § 141.330(a) through (f) may be substituted for all or part of required equipment.
[3] Inflatable buoyant apparatus (approval series 160.010) may be accepted or substituted if the vessel carries a 406 MHz Cat 1 emergency position indicating radio beacon (EPIRB) meeting 47 CFR part 80.

(2) The following approved survival craft may be substituted for survival craft required by Table 141.305 of this section:

(i) A lifeboat approved under approval series 160.135 may be substituted for any survival craft required by this section, provided it is arranged and equipped in accordance with part 199 of this chapter.

(ii) An inflatable liferaft approved under approval series 160.051 or 160.151, may be substituted for an inflatable buoyant apparatus or rigid buoyant apparatus.

(iii) An inflatable buoyant apparatus approved under approval series 160.010 may be substituted for a rigid buoyant apparatus.

(iv) A life float approved under approval series 160.027 may be substituted for a rigid buoyant apparatus.

(3) Unless it is determined to be necessary by the cognizant OCMI under § 141.225, or a TSMS applicable to the towing vessel, each towing vessel that operates solely on rivers need not carry survival craft if:

(i) It carries a 406 MHz Cat 1 EPIRB meeting 47 CFR part 80;

(ii) It is designed for pushing ahead and has a TSMS that contains procedures for evacuating crewmembers onto the tow or other safe location; or

(iii) It operates within 1 mile of shore.

(4) A towing vessel which is not required by this part to carry survival craft may carry a non-approved survival craft as excess equipment, provided that it is maintained in good working condition and maintained according to the manufacturer's instructions.

§ 141.310 Stowage of survival craft.

Survival craft must be stowed in accordance with the requirements of §199.130 of this chapter, as far as is practicable on existing towing vessels.

§ 141.315 Marking of survival craft and stowage locations.

Survival craft and stowage locations must be marked in accordance with the requirements of §§199.176 and 199.178 of this chapter.

§ 141.320 Inflatable survival craft placards.

Every towing vessel equipped with an inflatable survival craft must have, in conspicuous places near each inflatable survival craft, approved placards or other posted instructions for launching and inflating inflatable survival craft.

§ 141.325 Survival craft equipment.

(a) Each item of survival craft equipment must be of good quality, effective for the purpose it is intended to serve, and secured to the craft.

(b) Each towing vessel carrying a lifeboat must carry equipment in accordance with §199.175 of this chapter.

(c) Each life float and rigid buoyant apparatus must be fitted with a lifeline, pendants, a painter, and floating electric water light approved under approval series 161.010.

§ 141.330 Skiffs as survival craft.

A skiff may be substituted for all or part of the approved survival craft for towing vessels that do not operate more than 3 miles from shore. A skiff used as a survival craft does not require Coast Guard approval but must:

(a) Be capable of being launched within 5 minutes under all circumstances;

(b) Be of suitable size for all persons on board the towing vessel;

(c) Not exceed the loading specified on the capacity plate required by 33 CFR 183.23;

(d) Not contain modifications affecting the buoyancy or structure of the skiff;

(e) Be of suitable design for the vessel's intended service; and

(f) Be marked in accordance with §§199.176 and 199.178 of this chapter.

§ 141.340 Lifejackets.

(a) Each towing vessel must carry at least one appropriately-sized lifejacket, approved under approval series 160.002, 160.005, 160.055, 160.155, or 160.176, for each person on board.

(b) For towing vessels with berthing aboard, a sufficient number of additional lifejackets must be carried so that a lifejacket is immediately available for persons at each normally manned watch station.

(c) Where alternative means are used to meet the requirements of this section, as permitted by §141.225, there must be at least one lifejacket for each person onboard. Any TSMS applicable to the towing vessel must specify the number and location of lifejackets in such a manner as to facilitate immediate accessibility at normally occupied spaces including, but not limited to, accommodation spaces and watch stations.

(d) Lifejackets must be readily accessible.

(e) If the towing vessel carries inflatable lifejackets they must be of similar design to each other and have the same mode of operation.

(f) Each lifejacket must be marked:

(1) In block capital letters with the name of the vessel; and

(2) With Type I retro-reflective material approved under approval series 164.018. The arrangement of the retro-reflective material must meet IMO Resolution A.658(16) (incorporated by reference, see §136.112 of this subchapter).

(g) Lifejackets must have the following attachments and fittings:

(1) Each lifejacket must have a lifejacket light approved under approval series 161.012 or 161.112 securely attached to the front shoulder area of the lifejacket.

(2) Each lifejacket must have a whistle firmly secured by a cord to the lifejacket.

(h) Stowage positions for lifejackets stowed in a berthing space or stateroom and all lifejacket containers must be marked in block capital letters and numbers with the minimum quantity, identity, and, if sizes other than adult or universal sizes are used on the vessel, the size of the lifejackets stowed inside the container. The equipment may be identified in words or with the appropriate symbol from IMO Resolution A.760(18) (incorporated by reference, see §136.112 of this subchapter).

§ 141.350 Immersion suits.

(a) Except as provided in paragraph (a)(4) of this section, each towing vessel operating north of lat. 32° N. or south of lat. 32° S. must carry the number of immersion suits as prescribed in this paragraph (a):

(1) Each towing vessel operating in those regions must carry at least one appropriate-size immersion suit, approved under approval series 160.171, for each person onboard.

(2) In addition to the immersion suits required under paragraph (a)(1) of this section, each watch station, work station, and industrial work site must have enough immersion suits to equal the number of persons normally on watch in, or assigned to, the station or site at one time. However, an immersion suit is not required at a station or site for a person whose cabin or berthing area (and the immersion suits stowed in that location) is readily accessible to the station or site.

(3) Where alternative means are used to meet the requirements of this section, as permitted by §141.225, there must be at least one immersion suit of the appropriate size for each person onboard. Any TSMS applicable to the towing vessel must specify the number and location of immersion suits in such a manner as to facilitate immediate accessibility at normally occupied spaces including, but not limited to, accommodation spaces and watch stations.

(4) A towing vessel operating on rivers or in a limited geographic area is not required to carry immersion suits.

(b) Immersion suits carried on towing vessels must meet the requirements of §199.70(c) and (d) of this chapter.

§ 141.360 Lifebuoys.

(a) A towing vessel must carry lifebuoys as follows:

(1) A towing vessel less than 26 feet length must carry a minimum of one lifebuoy of not less than 510 millimeters (20 inches) in diameter.

(2) A towing vessel of at least 26 feet, but less than 79 feet, in length must carry a minimum of two lifebuoys located on opposite sides of the vessel where personnel are normally present. Lifebuoys must be at least 610 millimeters (24 inches) in diameter.

(3) A towing vessel 79 feet or more in length must carry four lifebuoys, with one lifebuoy located on each side of the operating station. Lifebuoys must be at least 610 millimeters (24 inches) in diameter.

(4) Where alternative means are used to meet the requirements of this section, as permitted by §141.225, any TSMS applicable to the towing vessel must specify the number and location of lifebuoys in such a manner as to facilitate rapid deployment of lifebuoys from exposed decks, including the pilot house.

(b) Each lifebuoy on a towing vessel must:

(1) Be approved under approval series 160.050 or 160.150;

(2) Be capable of being rapidly cast loose;

(3) Not be permanently secured to the vessel in any way;

(4) Be marked in block capital letters with the name of the vessel; and

(5) Be orange in color, if on a vessel on an oceans or coastwise route.

(c) Lifebuoys must have the following attachments and fittings:

(1) At least one lifebuoy must have a lifeline, secured around the body of the lifebuoy. If more than one lifebuoy is carried, at least one must not have a lifeline attached. Each lifeline on a lifebuoy must:

(i) Be buoyant;

(ii) Be of at least 18.3 meters (60 feet) in length;

(iii) Be non-kinking;

(iv) Have a diameter of at least 7.9 millimeters (5/16 inch);

(v) Have a breaking strength of at least 5 kilonewtons (1,124 pounds); and

(vi) Be of a dark color if synthetic, or of a type certified to be resistant to deterioration from ultraviolet light.

(2) At least two lifebuoys on a towing vessel greater than 26 feet must be fitted with a floating electric water light approved under approval series 161.010 or 161.110, unless the towing vessel is limited to daytime operation, in which case no floating electric water light is required.

(3) If a towing vessel carries only one lifebuoy, the lifebuoy must be fitted with a floating electric water light approved under approval series 161.010 or 160.110, unless the towing vessel is limited to daytime operation, in which case no floating electric water light is required. The water light must be attached by the lanyard with a corrosion-resistant clip to allow the water light to be quickly disconnected from the lifebuoy. The clip must have a strength of at least 22.7 kilograms (50 pounds).

(4) Each lifebuoy with a floating electric water light must have a lanyard of at least 910 millimeters (3 feet) in length, but not more than 1,830 millimeters (6 feet), securing the water light around the body of the lifebuoy.

§ 141.370 Miscellaneous life saving requirements for towing vessels.

Miscellaneous lifesaving requirements are summarized in Table 141.370 of this section. Equipment requirements are based on the area in which a towing vessel is operating, not the route for which it is certificated.

TABLE 141.370—MISCELLANEOUS LIFESAVING EQUIPMENT

Equipment (46 CFR section)	Area of operation						
	Limited geographic area	Rivers	Great Lakes and lakes, bays, and sounds as defined in § 136.110		Coastwise and ltd. coastwise		Oceans
			≤3 miles from shore	≤3 miles from shore	≤3 miles from shore	>3 miles from shore	
Visual Distress Signals (§ 141.375).	3 day and 3 night.	3 day and 3 night.	3 day and 3 night.	6 day and 6 night.	3 day and 3 night.	6 day and 6 night.	6 day and 6 night.
EPIRBs (§ 141.380)	.....	.....	.....	1 [1]	1–	1	1
Line Throwing Appliances (§ 141.385).	.....	.....	.....	.....	.....	1–	1

[1] Great Lakes service only.

§ 141.375 Visual distress signals.

(a) *Carriage requirement.* A towing vessel must carry a combination of day and night visual distress signals indicated in Table 141.370 of § 141.370 for specified areas where the vessel operates.

(b) *Day and night visual distress signals.* Hand-held red flare distress signals, approved under approval series 160.021 or 160.121, and hand-held rocket-propelled parachute red flares, approved under approval series 160.036 or 160.136, are acceptable as both day and night signals.

(c) *Signals for day visual distress only.* Floating orange smoke signals, approved under approval series 160.022, 160.122, or 160.157, and hand-held orange smoke distress signals, approved under approval series 160.037, are only acceptable as day signals.

(d) *Limited geographic area.* A vessel operating in a limited geographic area on a short run limited to approximately 30 minutes away from the dock is not required to carry visual distress signals under this section.

(e) *Stowage.* Each pyrotechnic distress signal carried to meet this section must be stowed in either:

(1) A portable watertight container carried at the operating station. Portable watertight containers for pyrotechnic distress signals must be of a bright color and must be clearly marked in legible contrasting letters at least 12.7 millimeters (0.5 inches) high with ''DISTRESS SIGNALS''; or

(2) A pyrotechnic locker secured above the freeboard deck, away from heat, in the vicinity of the operating station.

§ 141.380 Emergency position indicating radio beacon (EPIRB).

(a) Each towing vessel operating on oceans, coastwise, limited coastwise, or beyond 3 nautical miles from shore upon the Great Lakes must carry a Category 1, 406 MHz satellite Emergency Position Indicating Radio Beacon (EPIRB) that meets the requirements of 47 CFR part 80.

(b) When the towing vessel is underway, the EPIRB must be stowed in its float-free bracket with the controls set for automatic activation and be mounted in a manner so that it will float free if the towing vessel sinks.

(c) The name of the towing vessel must be marked or painted in clearly legible letters on each EPIRB, except on an EPIRB in an inflatable liferaft.

(d) The owner or managing operator must maintain valid proof of registration.

Note to paragraph (d). Registration information can be found at *www.beaconregistration.noaa.gov/*.

§ 141.385 Line throwing appliance.

Each towing vessel operating in oceans and coastwise service must have a line throwing appliance approved under approval series 160.040.

(a) *Stowage.* The line throwing appliance and its equipment must be readily accessible for use.

(b) *Additional equipment.* The line throwing appliance must have:

(1) The equipment on the list provided by the manufacturer with the approved appliance; and

(2) An auxiliary line that:

(i) Is at least 450 meters (1,500 feet) long;

(ii) Has a breaking strength of at least 40 kilonewtons (9,000 pounds-force); and

(iii) Is, if synthetic, of a dark color or certified by the manufacturer to be resistant to deterioration from ultraviolet light.

PART 142—FIRE PROTECTION

Subpart A —General

Subpart B—General Requirements for Towing Vessels

Subpart C—Fire Extinguishing and Detection Requirements

AUTHORITY: 46 U.S.C. 3103, 3301, 3306, 3308, 3316, 8104, 8904; 33 CFR 1.05; DHS Delegation 0170.1.

SOURCE: USCG–2006–24412, 81 FR 40101, June 20, 2016, unless otherwise noted.

Subpart A—General

§ 142.100 Purpose.

This part contains requirements for fire suppression and detection equipment and arrangements on towing vessels.

§ 142.105 Applicability and delayed implementation for existing vessels.

This part applies to all towing vessels subject to this subchapter.

(a) An existing towing vessel must comply with the requirements in this part no later than either July 20, 2018

or the date the vessel obtains a Certificate of Inspection (COI), whichever date is earlier.

(b) The delayed implementation provisions in paragraph (a) of this section do not apply to a new towing vessel.

Subpart B—General Requirements for Towing Vessels

§ 142.205 Alternate standards.

(a) Towing vessels in compliance with Chapter II–2 of SOLAS (incorporated by reference, see § 136.112 of this subchapter) will be deemed to be in compliance with this part.

(b) Towing vessels that comply with other alternate standards, deemed by the Commandant to provide an equivalent level of safety and performance, will be in compliance with this part.

§ 142.210 Alternate arrangements or equipment.

(a) Alternate arrangements or equipment to comply with this part may be approved in accordance with § 136.115 of this subchapter.

(b) All owners or operators of towing vessels with a Towing Safety Management System (TSMS) may comply with the requirements of subpart B of this part by outfitting their vessels with appropriate alternate arrangements or equipment so long as these variations provide an equivalent level of safety and performance and are properly documented in the TSMS.

(c) The cognizant Officer in Charge, Marine Inspection (OCMI) may require a towing vessel to carry specialized or additional fire protection, suppression, or detection equipment if:

(1) He or she determines that the conditions of the voyage render the requirements of this part inadequate; or

(2) The towing vessel is operated in globally remote areas or severe environments not covered under this part. These areas may include, but are not limited to, polar regions, remote islands, areas of extreme weather, and other remote areas where timely emergency assistance cannot be anticipated.

§ 142.215 Approved equipment.

(a) All hand-portable fire extinguishers, semi-portable fire-extinguishing systems, and fixed fire-extinguishing systems required by this part must be approved by the Commandant (CG–ENG). Where other equipment in this part is required to be approved, such equipment requires the specific approval of the Commandant.

(b) A listing of approved equipment and materials may be found online at *https://cgmix.uscg.mil/equipment*. Each cognizant OCMI may be contacted for information concerning approved equipment and materials.

(c) New installations of fire-extinguishing and fire-detection equipment of a type not required, or in excess of that required by this part, may be permitted if Coast Guard approved, or if accepted by the local OCMI, a TPO, or a Nationally Recognized Testing Laboratory (NRTL). Existing equipment and installations not meeting the applicable requirements of this part may be continued in service so long as they are in good condition and accepted by the local OCMI or TPO.

§ 142.220 Fire hazards to be minimized.

Each towing vessel must be maintained and operated so as to minimize fire hazards and to ensure the following:

(a) All bilges and void spaces are kept free from accumulation of combustible and flammable materials and liquids insofar as practicable.

(b) Storage areas are kept free from accumulation of combustible and flammable materials insofar as practicable.

§ 142.225 Storage of flammable or combustible products.

(a) Paints, coatings, or other flammable or combustible products onboard a towing vessel must be stored in a designated storage room or cabinet when not in use.

(b) If a storage room is provided, it may be any room or compartment that is free of ignition sources.

(c) If a dedicated storage cabinet is provided it must be secured to the vessel so that it does not move and must be either:

(1) A flammable liquid storage cabinet that satisfies UL 1275 (incorporated by reference, see § 136.112 of this subchapter); or

(2) A flammable liquid storage cabinet that satisfies FM Approvals Standard 6050 (incorporated by reference, see §136.112 of this subchapter); or

(3) Another suitable steel container that provides an equivalent level of protection.

(d) A B–II portable fire extinguisher must be located near the storage room or cabinet. This is in addition to the portable fire extinguishers required by Tables 142.230(d)(1) and 142.230(d)(2) of §142.230.

§ 142.226 Firefighter's outfit.

Each towing vessel 79 feet or more in length operating on oceans and coastwise routes that does not have an installed fixed fire-extinguishing system must have the following:

(a) At least two firefighter's outfits that meet NFPA 1971 (incorporated by reference, see §136.112 of this subchapter); and

(b) Two self-contained breathing apparatus of the pressure demand, open circuit type, approved by the National Institute for Occupational Safety and Health (NIOSH), under 42 CFR part 84. The breathing apparatus must have a minimum 30-minute air supply and full facepiece.

§ 142.227 Fire axe.

Each towing vessel must be equipped with at least one fire axe that is readily accessible for use from the exterior of the vessel.

§ 142.230 Hand-portable fire extinguishers and semi-portable fire-extinguishing systems.

(a) Hand-portable fire extinguishers and semi-portable fire-extinguishing systems are classified by a combination letter and Roman numeral. The letter indicates the type of fire which the unit could be expected to extinguish, and the Roman numeral indicates the relative size of the unit.

(b) For the purpose of this subchapter, all required hand-portable fire extinguishers and semi-portable fire-extinguishing systems must include Type B classification, suitable for extinguishing fires involving flammable liquids, grease, etc.

(c) The number designations for size run from ''I'' for the smallest to ''V'' for the largest. Sizes I and II are hand-portable fire extinguishers; sizes III, IV, and V are semi-portable fire-extinguishing systems, which must be fitted with hose and nozzle or other practical means to cover all portions of the space involved. Examples of the sizes for some of the typical hand-portable fire extinguishers and semi-portable fire-extinguishing systems appear in Table 142.230(c) of this section.

TABLE 142.230(c)—PORTABLE AND SEMI-PORTABLE EXTINGUISHERS

Classification	Foam, liters (gallons)	Carbon dioxide, kilograms (pounds)	Dry chemical, kilograms (pounds)
B–I	4.75 (1.25)	2 (4)	1 (2)
B–II	9.5 (2.5)	7 (15)	4.5 (10)
B–III	45 (12)	16 (35)	9 (20)
B–IV	75 (20)	23 (50)	13.5 (30)
B–V	125 (33)	45 (100)	23 (50)

(d)(1) Towing vessels of 65 feet or less in length must carry at least the minimum number of hand-portable fire extinguishers set forth in Table 142.230(d)(1) of this section.

TABLE 142.230(d)(1)—B–I HAND-PORTABLE FIRE EXTINGUISHERS

Length, feet	Minimum number of B–I hand-portable fire extinguishers required[1]	
	No fixed fire-extinguishing system in machinery space	Fixed fire-extinguishing system in machinery space
Under 26[2]	1	0
26 and over, but under 40	2	1
40 and over, but not over 65	3	2

[1] One B–II hand-portable fire extinguisher may be substituted for two B–I hand-portable fire extinguishers.

[2] *See* §136.105 of this subchapter concerning vessels under 26 feet.

(2) Towing vessels of more than 65 feet in length must carry at least the minimum number of hand-portable fire extinguishers set forth in Table 142.230(d)(2) of this section.

TABLE 142.230(d)(2)—B–II HAND-PORTABLE FIRE EXTINGUISHERS

Gross tonnage—		Minimum number of B–II hand-portable fire extinguishers
Over	Not over	
	50	1
50	100	2
100	500	3
500	1,000	6

TABLE 142.230(d)(2)—B–II HAND-PORTABLE FIRE EXTINGUISHERS—Continued

Gross tonnage—		Minimum number of B–II hand-portable fire extinguishers
Over	Not over	
1,000	.....	8

(i) In addition to the hand-portable extinguishers required by paragraph (d)(2) of this section, one Type B–II hand-portable fire extinguisher must be fitted in the engine room for each 1,000 brake horsepower of the main engines or fraction thereof. A towing vessel is not required to carry more than six additional B–II extinguishers in the engine room for this purpose, irrespective of horsepower.

(ii) [Reserved]

(e) The frame or support of any size III, IV, or V semi-portable extinguisher fitted with wheels must be welded or otherwise permanently attached to a steel bulkhead or deck to prevent it from rolling under heavy sea conditions.

§ 142.235 Vessels contracted for prior to November 19, 1952.

(a) Towing vessels contracted for construction prior to November 19, 1952, must meet the applicable provisions of this part concerning the number and general type of equipment required.

(b) Existing equipment and installations previously approved, but not meeting the applicable requirements for approval by the Commandant, may be continued in service so long as they are in good condition.

(c) All new installations and replacements must meet the requirements of this part.

§ 142.240 Inspection, testing, maintenance, and records.

(a) *Inspection and testing.* All hand-portable fire extinguishers, semi-portable fire-extinguishing systems, fire-detection systems, and fixed fire-extinguishing systems, including ventilation, machinery shutdowns, and fixed fire-extinguishing system pressure-operated dampers onboard the vessel, must be inspected or tested at least once every 12 months, as prescribed in paragraphs (a)(1) through (8) of this section, or more frequently if otherwise required by the TSMS applicable to the vessel.

(1) Portable fire extinguishers must be tested in accordance with the inspection, maintenance procedures and hydrostatic pressure tests required by Chapters 7 and 8 of NFPA 10, Portable Fire Extinguishers (incorporated by reference, see §136.112 of this subchapter), with the frequency as specified by NFPA 10. In addition, carbon dioxide and Halocarbon portable fire extinguishers must be refilled when the net content weight loss exceeds that specified for fixed systems in Table 142.240 of this section.

(2) Semi-portable and fixed fire-extinguishing systems must be inspected and tested, as required by Table 142.240 of this section, in addition to the tests required by §§147.60 and 147.65 of this chapter.

(3) Flexible connections and discharge hoses on all semi-portable extinguishers and fixed extinguishing systems must be inspected and tested in accordance with §147.65 of this chapter.

(4) All cylinders containing compressed gas must be tested and marked in accordance with §147.60 of this chapter.

(5) All piping, controls, valves, and alarms must be inspected; and the operation of controls, alarms, ventilation shutdowns, and pressure-operated dampers for each fixed fire-extinguishing system and detecting system must be tested, to determine that the system is operating properly.

(6) The fire main system must be charged, and sufficient pressure must be verified at the most remote and highest outlets.

(7) All fire hoses must be inspected for excessive wear, and subjected to a test pressure equivalent to the maximum service pressure. All fire hoses which are defective and incapable of repair must be destroyed.

(8) All smoke- and fire-detection systems, including detectors and alarms, must be tested.

TABLE 142.240—SEMI-PORTABLE AND FIXED FIRE-EXTINGUISHING SYSTEMS

Type system	Test
Carbon dioxide	Weigh cylinders. Recharge if weight loss exceeds 10 percent of weight of the 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 §§ 147.60 and 147.65 of this chapter.
Halon and Halocarbon	Recharge or replace if weight loss exceeds 5 percent of the weight of the charge or if cylinder has a pressure gauge, recharge cylinder if pressure loss exceeds 10 percent 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 §§ 147.60 and 147.65 or § 147.67 of this chapter. 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.
Dry Chemical (cartridge operated).	Inspect pressure cartridge and replace if end is punctured or if determined to have leaked or is in an 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 within 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 dry chemical is needed.
Foam (stored pressure)	See that pressure gauge, if so equipped, is within 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 foam is needed. Replace premixed agent every 3 years.
Inert gas	Recharge or replace if cylinder pressure loss exceeds 5 percent, 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 and nozzles to ensure they are clear.
Water mist	Test and inspect system in accordance with the maintenance instructions in the system manufacturer's design, installation, operation, and maintenance manual.

(b) *Maintenance.* In addition to the requirements in paragraph (a) of this section, all fire-suppression and detection equipment and systems on board a towing vessel must be maintained in accordance with the attached nameplate, manufacturer's approved design manual, or as otherwise provided in any TSMS applicable to the vessel.

(c) *Records.* (1) The records of inspections and tests of fire-detection systems and fixed fire-extinguishing systems must be recorded in the TVR, official logbook, or in accordance with any TSMS applicable to the vessel. The following minimum information is required:

(i) The dates when inspections and tests were performed, the number and any other identification of each unit inspected and tested, the results of the inspections and tests, and the name of the crewmember, surveyor or auditor and any others conducting the inspections and tests, must be included.

(ii) Receipts and other records generated by these inspections and tests must be retained for at least 1 year and made available upon request.

(2) The records of inspections and tests of hand-portable fire extinguishers and semi-portable fire-extinguishing systems may be recorded in accordance with paragraph (c)(1) of this section, or on a tag attached to each unit by a qualified servicing organization.

§ 142.245 Requirements for training crews to respond to fires.

(a) *Drills and instruction.* The master of a towing vessel must ensure that each crewmember participates in fire-fighting drills and receives instruction at least once each month. The instruction may coincide with the drills, but is not required to do so. All crewmembers must be familiar with their fire-fighting duties, and, specifically how to:

(1) Fight a fire in the engine room and elsewhere onboard the towing vessel, including how to:

(i) Operate all of the fire-extinguishing equipment onboard the towing vessel;

(ii) Stop any mechanical ventilation system for the engine room and effectively seal all natural openings to the space to prevent leakage of the extinguishing agent; and

(iii) Operate the fuel shut-off(s) for the engine room.

(2) Activate the general alarm;

(3) Report inoperative alarm systems and fire-detection systems; and

(4) Don a firefighter's outfit and a self-contained breathing apparatus, if the vessel is so equipped.

(b) *Alternative form of instruction.* Video training, followed by a discussion led by someone familiar with the contingencies listed in paragraph (a) of this section, is an acceptable, alternative form of instruction. This instruction may occur either onboard or off the towing vessel.

(c) *Participation in drills.* Drills must take place onboard the towing vessel as if there were an actual emergency. They must include:

(1) Participation by all crewmembers;

(2) Breaking out and using, or simulating the use of, emergency equipment;

(3) Testing of all alarm and detection systems by operation of the test switch or by activation of one or more devices;

(4) Putting on protective clothing by at least one person, if the towing vessel is so equipped; and

(5) Functionally testing the self-priming capability of the portable fire pump, if the towing vessel is so equipped.

(d) *Safety orientation.* The master must ensure that each crewmember who has not participated in the drills required by paragraph (a) of this section and received the instruction required by that paragraph (a) receives a safety orientation within 24 hours of reporting for duty. The safety orientation must cover the particular contingencies listed in paragraph (a) of this section.

Note to §142.245. See §140.915 for requirements for keeping records of training.

Subpart C—Fire Extinguishing and Detection Equipment Requirements

§142.300 Excepted vessels.

Excepted vessels, as defined in §136.110 of this subchapter, need not comply with the provisions of §§142.315 through 142.330.

§142.315 Additional fire-extinguishing equipment requirements.

(a) A towing vessel that is:

(1) Certificated for rivers, lakes, bays, and sounds, less than 3 nautical miles from shore on the Great Lakes; or

(2) Certificated for limited coastwise, coastwise, oceans or waters beyond 3 nautical miles from shore on the Great Lakes, whose contract for construction was executed prior to August 27, 2003; or

(3) Pushing a barge ahead or hauling a barge alongside, when the barge's coastwise, limited coastwise, or Great Lakes route is restricted, as indicated on its COI, so that the barge may operate ''in fair weather only, within 12 miles of shore'' or with words to that effect, must be equipped with either:

(i) An approved B–V semi-portable fire-extinguishing system to protect the engine room; or

(ii) A fixed fire-extinguishing system installed to protect the engine room.

(b) A towing vessel that is certificated for limited coastwise, coastwise, oceans, or beyond 3 nautical miles from shore on the Great Lakes whose contract for construction was executed on or after August 27, 2003, except for those specified in paragraph (a)(3) of this section, must be equipped with both:

(1) An approved B–V semi-portable fire-extinguishing system to protect the engine room; and

(2) A fixed fire-extinguishing system installed to protect the engine room.

§142.325 Fire pumps, fire mains, and fire hoses.

Each towing vessel must have either a self-priming, power-driven, fixed fire pump, a fire main, and hoses and nozzles in accordance with paragraphs (a) through (d) of this section; or a portable pump, and hoses and nozzles, in

accordance with paragraphs (e) and (f) of this section.

(a) A fixed fire pump must be capable of:

(1) Delivering water simultaneously from the two highest hydrants, or from both branches of the fitting if the highest hydrant has a Siamese fitting, at a pitot-tube pressure of at least 344 kilopascals (kPa) (50 pounds per square inch (psi)), and a flow rate of at least 300 liters per minute (lpm) (80 gallons per minute (gpm)); and

(2) Being energized remotely from a safe place outside the engine room and at the pump.

(b) All suction valves necessary for the operation of the fire main must be kept in the open position or capable of operation from the same place where the remote fire pump control is located.

(c) The fire main must have a sufficient number of fire hydrants with attached hose to allow a stream of water to reach any part of the machinery space using a single length of fire hose.

(d) The hose must be a lined commercial fire hose 15 meters (50 feet) in length, at least 40 millimeters (1.5 inches) in diameter, and fitted with a nozzle made of corrosion-resistant material capable of providing a solid stream and a spray pattern.

(e) The portable fire pump must be self-priming and power-driven, with:

(1) A minimum capacity of at least 300 LPM (80 gpm) at a discharge gauge pressure of not less than 414 kPa (60 psi), measured at the pump discharge;

(2) A sufficient amount of lined commercial fire hose 15 meters (50 feet) in length, at least 40 mm (1.5 inches) in diameter and immediately available to attach to it so that a stream of water will reach any part of the vessel; and

(3) A nozzle made of corrosion-resistant material capable of providing a solid stream and a spray pattern.

(f) The pump must be stowed with its hose and nozzle outside of the machinery space.

§ 142.330 Fire-detection system requirements.

(a) *Fire-detection systems.* Except as provided in paragraph (a)(8) of this section, each towing vessel must have a fire-detection system installed to detect engine room fires. The owner or managing operator must ensure the following:

(1) Each detector, control panel, remote indicator panel, and fire alarm are approved by the Commandant under approval series 161.002 or listed by a NRTL as set forth in 29 CFR 1910.7;

(2) The system is installed, tested, and maintained in accordance with the manufacturer's design manual;

(3) The system is arranged and installed so a fire in the engine room automatically sets off alarms on a fire detection control panel at the operating station. On vessels with more than one operating station, only one of them must be outfitted with a fire detection control panel. Any other operating station must be outfitted with either a fire detection control panel or a remote indicator panel;

(4) The control panel includes:

(i) A power available light;

(ii) An audible to notify crew of a fire;

(iii) Visual alarm alarms to identify the zone or zones of origin of the fire;

(iv) A means to silence the audible alarm while maintaining indication by the visual alarms;

(v) A circuit-fault detector test-switch, or internal supervision of circuit integrity; and

(vi) Labels for all switches and indicator lights, identifying their functions.

(5) The system draws power from two sources. Switchover from the primary source to the secondary source may be either manual or automatic;

(6) The system serves no other purpose, unless it is an engine room monitoring system complying with paragraph (a)(8) of this section; and

(7) The design of the system and its installation on the towing vessel is certified and inspected by a registered professional engineer with experience in fire-detection system design, by a technician with qualifications as a National Institute for Certification in Engineering Technologies (NICET) level IV fire alarm engineering technician, or by an authorized classification society with equivalent experience, to comply with paragraphs (a)(1) through (6) of this section.

(8) A towing vessel whose construction was contracted for prior to January 18, 2000, may use an existing engine room monitoring system (with fire-detection capability) instead of a fire-detection system, if the monitoring system is operable and complies with paragraphs (a)(2) through (7) of this section, and uses detectors listed by an NRTL.

(b) *Smoke detection in berthing spaces.* Each towing vessel must be equipped with a means to detect smoke in the berthing spaces and lounges that alerts individuals in those spaces. This may be accomplished by an installed detection system, or by using individual battery-operated detectors meeting UL 217 (incorporated by reference, see §136.112 of this subchapter). Detection systems or individual detectors must be kept operational at all times when the crew is onboard the towing vessel.

(c) *Heat-detection system in galley.* Each new towing vessel equipped with a galley must have a heat-detection system with one or more restorable heat-sensing detectors to detect fires in the galley. The system must be arranged to sound an audible alarm at each operating station. This may be a separate zone in the detection system required by paragraph (a) of this section, or a separate detection system complying with paragraphs (a)(1) and (2) of this section.

PART 143—MACHINERY AND ELECTRICAL SYSTEMS AND EQUIPMENT

Subpart A—General

Sec.

Subpart B—Requirements for All Towing Vessels

Subpart C—Requirements for New Towing Vessels

AUTHORITY: 46 U.S.C. 3103, 3301, 3306, 3308, 3316, 8104, 8904; 33 CFR 1.05; DHS Delegation No. 0170.1.

SOURCE: USCG–2006–24412, 81 FR 40101, June 20, 2016, unless otherwise noted.

Subpart A—General

§ 143.100 Purpose.

This part contains requirements for the design, installation, and operation of primary and auxiliary machinery and electrical systems and equipment on towing vessels.

§ 143.105 Applicability.

This part applies to all towing vessels subject to this subchapter. The specific applicability of requirements in each subpart is set forth in that subpart.

§ 143.115 Definitions.

The definitions provided in § 136.110 of this subchapter apply to this part. In addition, the following definition applies exclusively to this part:

Independent means the equipment is arranged to perform its required function regardless of the state of operation, or failure, of other equipment.

Subpart B—Requirements for All Towing Vessels

§ 143.200 Applicability.

(a) This subpart applies to all towing vessels subject to this subchapter.

(b) Except as noted paragraph (c) of this section, which lists later implementation dates for requirements in §§ 143.450 and 143.460, an existing towing vessel must comply with the applicable requirements in this part no later than either July 20, 2018 or the date the vessel obtains a Certificate of Inspection (COI), whichever date is earlier. The delayed implementation provisions in this section do not apply to a new towing vessel.

(c) Existing vessels must meet the pilothouse alerter and towing machinery requirements of §§ 143.450 and 143.460 no later than 5 years after the issuance of the first COI for the vessel.

§ 143.205 General.

(a) Machinery and electrical systems must be designed and maintained to provide for safe operation of the towing vessel and safety of persons onboard under normal and emergency conditions.

(b) The crew of each towing vessel must demonstrate the ability to operate the primary and auxiliary machinery and electrical systems for which they are responsible, and to do so under normal and emergency conditions. This includes, but is not limited to, responses to alarms and restoration of propulsion and steering in the event of failure.

(c) Propulsion machinery, including main engines, reduction gears, shafting, bearings, and electrical equipment and systems, must:

(1) Be maintained to ensure proper operation;

(2) Be suitable for route and service; and

(3) Have suitable propulsion controls to provide the operator full control at each operating station.

(d) Repairs and minor alterations to existing towing vessels must be made in accordance with this part. New installations that are not replacements in kind must comply with the requirements of subpart C of this part, if applicable.

§ 143.210 Alternate design or operational considerations.

(a) Machinery or electrical systems of a novel design, unusual form, or special material that cannot be reviewed or approved in accordance with this part, may be approved by the Commanding Officer, Marine Safety Center. It must be shown by systematic analysis, based on engineering principles, that the machinery or electrical equipment or system provides an equivalent level of safety. The owner or managing operator must submit detailed plans, material component specifications, and design criteria, including the expected towing vessel service and operating environment, to the Marine Safety Center. Examples of novel design include use of liquefied natural gas, compressed natural gas, or propane fuel for propulsion, and hybrid, fuel cell, or battery propulsion.

(b) Alternate arrangements or equipment to comply with this part may be approved in accordance with § 136.115 of this subchapter.

§ 143.215 Existing vessels built to class.

(a) An existing towing vessel classed by a recognized classification society, as appropriate for the intended service and routes, is considered in compliance with the machinery and electrical standards of this subpart.

(b) An existing vessel built and equipped to conform to a recognized classification society's rules, appropriate for the intended service and routes, but not currently classed, may be deemed by the Officer in Charge, Marine Inspection (OCMI), or third-party organization (TPO), to be in compliance with this part, provided that the towing vessel conforms to the class rules.

(c) Existing vessels meeting either paragraph (a) or (b) of this section must also meet the requirements of §§ 143.245 and 143.450.

§ 143.220 Machinery space fire prevention.

(a) All seals and gaskets must be properly maintained to prevent leaks of flammable or combustible liquid, as those terms are defined in 46 CFR subpart 30.10, into the machinery space.

(b) Piping and machinery components that exceed 220 °C (428 °F), including fittings, flanges, valves, exhaust manifolds, and turbochargers, must be insulated. Measures must be in place to prevent flammable or combustible liquid piping leaks from coming into contact with these components.

(c) Flammable and combustible products must not be stored in machinery spaces, unless they are stored in a suitable container that meets the requirements of § 142.225 of this subchapter.

§ 143.225 Control and monitoring requirements.

(a) Each towing vessel must have a means to monitor and control the amount of thrust, rudder angle, and (if applicable) direction of thrust, at each operating station.

(b) Each towing vessel equipped with rudder(s) must have a means to monitor and control the position of the rudder(s) at each operating station.

§ 143.230 Alarms and monitoring.

(a) Each towing vessel must have a reliable means to provide notification when an emergency condition exists or an essential system develops problems that require attention. The following alarms must be provided:

(1) Main engine low lubricating oil pressure;

(2) Main engine high cooling water temperature;

(3) Auxiliary generator engine low lubricating oil pressure;

(4) Auxiliary generator engine high cooling water temperature;

(5) High bilge levels;

(6) Low hydraulic steering fluid levels, if applicable; and

(7) Low fuel level, if fitted with a day tank.

(b) Alarms must:

(1) Be visible and audible at each operating station. The alarm located at the operating station may be a summary alarm; if the alarm at the operating station is a summary alarm, the specific alarm condition must be indicated at the machinery or bilge location;

(2) Have a means to test actuation at each operating station or have a continuous self-monitoring alarm system which actuates if an alarm point fails or becomes disabled;

(3) Continue until they are acknowledged; and

(4) Not interfere with night vision at the operating station.

(c) The following systems must be equipped with gauges at the machinery location:

(1) Main engine lubricating oil pressure and main engine RPM;

(2) Main engine cooling water temperature;

(3) Auxiliary generator engine lubricating oil pressure and auxiliary generator engine RPM;

(4) Auxiliary generator engine cooling water temperature; and

(5) Hydraulic steering fluid pressure, if the vessel is equipped with hydraulic steering systems.

§ 143.235 General alarms.

(a) This section does not apply to an excepted vessel as defined in § 136.110 of this subchapter.

(b) Each towing vessel must be fitted with a general alarm that:

(1) Is activated at each operating station and can notify persons onboard in the event of an emergency;

(2) Is capable of notifying persons in any accommodation, work space, and the engine room;

(3) Has installed, in the engine room and any other area where background noise makes a general alarm hard to hear, a supplemental flashing red light that is identified with a sign that reads: ''Attention General Alarm—When Alarm Sounds or Flashes Go to Your Station''; and

(4) A public-address (PA) system or other means of alerting all persons on the towing vessel may be used in lieu of the general alarm in paragraph (b) of this section if the system meets the requirements of paragrahs (b)(2) and (3) of this section.

§ 143.240 Communication requirements.

(a) This section does not apply to an excepted towing vessel as defined in § 136.110 of this subchapter.

(b) Each towing vessel must be fitted with a communication system between the pilothouse and the engine room that:

(1) Consists of either fixed or portable equipment, such as a sound-powered telephone, portable radios, or other reliable method of voice communication, with a main or reserve power supply that is independent of the towing vessel's electrical system; and

(2) Provides two-way voice communication and calling between the pilothouse and either the engine room or a location immediately adjacent to an exit from the engine room.

(c) Towing vessels with more than one propulsion unit and independent pilothouse control for all engines are not required to have internal communication systems.

(d) When the pilothouse engine controls and the access to the engine room are within 3 meters (10 feet) of each other and allow unobstructed visible contact between them, direct voice communication is acceptable instead of a communication system.

§ 143.245 Readiness and testing.

(a) Essential systems or equipment must be regularly tested and examined. Tests and examinations must verify that the system or equipment functions as designed. If a component is found unsatisfactory, it must be repaired or replaced. Test and examination procedures must be in accordance with manufacturer's instructions or the Towing Safety Management System (TSMS) applicable to the vessel, if the vessel has a TSMS.

(b) Each towing vessel must perform the applicable tests in Table 143.245(b) of this section. The tests required by this section must be recorded in accordance with part 140 of this subchapter.

TABLE 143.245(b)—REQUIRED TESTS AND FREQUENCY

Tests of:	Frequency:
Propulsion controls; ahead and astern at the operating station.	Before the vessel gets underway, but no more than once in any 24 hour period.
Steering controls at the operating station.	Before the vessel gets underway, but no more than once in any 24 hour period.
Pilothouse alerter system	Weekly.
All alternate steering and propulsion controls.	At least once every 3 months.
Power supply for alarm actuation circuits for alarms required by § 143.230.	At least once every 3 months.
Communications required by § 143.240.	Weekly.
General alarm if the vessel is so equipped.	Weekly.
Emergency lighting and power if the vessel is so equipped.	At least once every 3 months.
Charge of storage batteries if the vessel is so equipped, for emergency lighting and power.	At least once every 3 months.
Alarm setpoints	Twice every 5 years, with no more than 3 years elapsing since last test.
Pressure vessel relief valves	Twice every 5 years, with no more than 3 years elapsing since last test.
All other essential systems	At least once every 3 months.

§ 143.250 System isolation and markings.

Electrical equipment, piping for flammable or combustible liquid, seawater cooling, or fire-fighting systems must be provided with isolation devices and markings as follows:

(a) Electrical equipment must be provided with circuit isolation and must be marked as described in § 143.400.

(b) Electrical panels or other enclosures containing more than one source of power must be fitted with a sign

warning persons of this condition and identifying where to secure all sources.

(c) Piping for flammable or combustible liquid, seawater cooling, or firefighting systems must be fitted with isolation valves that are clearly marked by labeling or color coding that enables the crew to identify its function.

(d) Any piping system that penetrates the hull below the waterline must be fitted with an accessible valve, located as close to the hull penetration as is practicable, for preventing the accidental admission of water into the vessel either through such pipes or in the event of a fracture of such pipe. The valve must be clearly marked by labeling or color coding that enables the crew to identify its function.

(e) Color coding required by this section may be met by complying with coding standards contained in the ISO 14726:2008(E) (incorporated by reference, see §136.112 of this subchapter), or in accordance with the TSMS applicable to the vessel.

§143.255 Fuel system requirements.

(a) Fuel systems for towing vessel main engines and generators must have a documented maintenance plan to ensure proper operation of the system.

(b) A continuous supply of clean fuel must be provided to main propulsion engines and generators.

(c) The fuel system must include filters and/or purifiers. Where filters are used:

(1) A supply of spare fuel filters must be provided onboard; and

(2) Fuel filters must be replaced in accordance with manufacturer's requirements or the vessel's TSMS, if applicable.

(d) Except as otherwise permitted under §143.210 or §143.520, no fuel other than diesel fuel may be used.

§143.260 Fuel shutoff requirements.

(a) This section does not apply to an excepted towing vessel as defined in §136.110 of this subchapter.

(b) To stop the flow of fuel in the event of a fire or break in the fuel line, a remote fuel shutoff valve must be fitted on any fuel line that supplies fuel directly to a propulsion engine or generator prime mover.

(c) The valve must be installed in the fuel piping directly outside of the fuel oil supply tank.

(d) The valve must be operable from a safe place outside the space where the valve is installed.

(e) Each remote valve control must be marked in clearly legible letters, at least 25 millimeters (1 inch) high, indicating the purpose of the valve and the way to operate it.

§143.265 Additional fuel system requirements for towing vessels built after January 18, 2000.

(a) *Applicability*. This section applies to towing vessels that are not excepted vessels, as defined in §136.110 of this subchapter, and that were built after January 18, 2000. Except for outboard engines or portable bilge or fire pumps, each fuel system must comply with this section.

(b) *Portable fuel systems*. The vessel must not incorporate or carry portable fuel systems, including portable tanks and related fuel lines and accessories, except when used for outboard engines or portable bilge or fire pumps. The design, construction, and stowage of portable tanks and related fuel lines and accessories must comply with the ABYC H–25 (incorporated by reference, see §136.112 of this subchapter).

(c) *Vent pipes for integral fuel tanks*. Each integral fuel tank must have a vent that connects to the highest point of the tank, discharges on a weather deck through a bend of 180 degrees, and is fitted with a 30-by-30-mesh corrosion-resistant flame screen. Vents from two or more fuel tanks may combine in a system that discharges on a weather deck. The net cross-sectional area of the vent pipe for the tank must be not less than 312.3 square millimeters (0.484 square inches), for any tank filled by gravity. The cross-sectional area of the vent pipe, or the sum of the vent areas when multiple vents are used, must not be less than that of the fill pipe cross-sectional area for any tank filled by pump pressure.

(d) *Fuel piping*. Except as permitted in paragraphs (d)(1) through (3) of this section, each fuel line must be seamless and made of steel, annealed copper, nickel-copper, or copper-nickel.

Each fuel line must have a wall thickness no less than 0.9 millimeters (0.035 inches) except for the following:

(1) Aluminum piping is acceptable on an aluminum-hull towing vessel if it is at least Schedule 80 in thickness.

(2) Nonmetallic flexible hose is acceptable if it:

(i) Is used in lengths of not more than 0.76 meters (30 inches);

(ii) Is visible and easily accessible;

(iii) Does not penetrate a watertight bulkhead;

(iv) Is fabricated with an inner tube and a cover of synthetic rubber or other suitable material reinforced with wire braid; and

(v) Either:

(A) If designed for use with compression fittings, is fitted with suitable, corrosion-resistant, compression fittings, or fittings compliant with the SAE J1475 Revised JUN96 (incorporated by reference, see §136.112 of this subchapter); or

(B) If designed for use with clamps, is installed with two clamps at each end of the hose. Clamps must not rely on spring tension and must be installed beyond the bead or flare or over the serrations of the mating spud, pipe, or hose fitting.

(3) Nonmetallic flexible hose complying with SAE J1942 Revised APR2007 (incorporated by reference, see §136.112 of this subchapter), is also acceptable.

(e) *Alternative standards.* A towing vessel of less than 79 feet in length may comply with any of the following standards for fuel systems instead of those of paragraph (d) in this section:

(1) ABYC H–33 (incorporated by reference, see §136.112 of this subchapter);

(2) Chapter 5 of NFPA 302 (incorporated by reference, see §136.112 of this subchapter); or

(3) 33 CFR chapter I, subchapter S (Boating Safety).

§143.270 Piping systems and tanks.

Piping and tanks exposed to the outside of the hull must be made of metal and maintained in a leak free condition.

§143.275 Bilge pumps or other dewatering capability.

There must be an installed or portable bilge pump for emergency dewatering. Any portable pump must have sufficient hose length and pumping capability. All installed bilge piping must have a check/foot valve in each bilge suction that prevents unintended backflooding through bilge piping.

§143.300 Pressure vessels.

(a) Pressure vessels over 5 cubic feet in volume and over 15 pounds per square inch maximum allowable working pressure (MAWP) must be equipped with an indicating pressure gauge (in a readily visible location) and with one or more spring-loaded relief valves. The total relieving capacity of such relief valves must prevent pressure from exceeding the MAWP, as established by the manufacturer, by more than 10 percent.

(b) Pressure vessels must be externally examined annually. Relief valves must be tested in accordance with §143.245.

(c) All pressure vessels must have the MAWP indicated by a stamp, nameplate, or other means visible to the crew.

(d) Pressure vessels installed after July 20, 2018, or the date the vessel obtains a Certificate of Inspection (COI), whichever date is earlier, must meet the requirements of §143.545.

[USCG–2006–24412, 81 FR 40101, June 20, 2016; 81 FR 47312, July 21, 2016]

§143.400 Electrical systems, general.

(a) Electrical systems and equipment must function properly and minimize system failures and fire and shock hazards.

(b) Installed electrical power source(s) must be capable of carrying the electrical load of the towing vessel under normal operating conditions.

(c) Electrical equipment must be marked with its respective current and voltage ratings.

(d) Individual circuit breakers on switchboards and distribution panels must be labeled with a description of the loads they serve.

(e) Electrical connections must be suitably installed to prevent them from coming loose through vibration or accidental contact.

(f) Electrical equipment and electrical cables must be suitably protected from wet and corrosive environments.

(g) Electrical components that pose an electrical hazard must be in an enclosure.

(h) Electrical conductors passing though watertight bulkheads must be installed so that the bulkhead remains watertight.

(i) The connections of flexible cable plugs and socket outlets must be designed to prevent unintended separation.

§ 143.410 Shipboard lighting.

(a) Sufficient lighting suitable for the marine environment must be provided within crew working and living areas.

(b) Emergency lighting must be provided for all internal crew working and living areas. Emergency lighting sources must provide for sufficient illumination under emergency conditions to facilitate egress from each space and must be either:

(1) Automatic, battery-operated with a duration of no less than 2 hours; or

(2) Non-electric, phosphorescent adhesive lighting strips that are installed along escape routes and sufficiently visible to enable egress with no power.

(c) Each towing vessel must be equipped with at least two portable, battery-powered lights. One must be located in the pilothouse and the other at the access to the engine room.

§ 143.415 Navigation lights.

(a) Towing vessels more than 65 feet in length must use navigation lights that meet UL 1104 (incorporated by reference, see §136.112 of this subchapter) or other standards accepted by the Coast Guard.

(b) Towing vessels 65 feet or less in length may meet the requirements listed in 33 CFR 183.810 or paragraph (a) of this section.

§ 143.450 Pilothouse alerter system.

(a) Except as provided in paragraph (d) or (e) of this section, a towing vessel with overnight accommodations and alternating watches (shift work), when pulling, pushing or hauling alongside one or more barges, must have a system to detect when its master or mate (pilot) becomes incapacitated. The system must:

(1) Have an alarm in the pilothouse distinct from any other alarm;

(2) Require action from the master or officer in charge of a navigational watch, during an interval not to exceed 10 minutes, in order to reset the alarm timer; and

(3) Immediately (within 30 seconds) notify another crewmember if the pilothouse alarm is not acknowledged.

(b) The time interval for the system alarm must be adjustable. The time may be adjusted by the owner or managing operator but must not be in excess of 10 minutes. This time interval, and information on alerter operation, must be provided on board and specified in the vessel's TSMS if applicable.

(c) The system alarm may be reset physically (*e.g.* a push button), or the reset may be accomplished by a link to other pilothouse action such as rudder or throttle control movement, or motion detection of personnel.

(d) A towing vessel need not comply with this section if a second person is provided in the pilothouse.

(e) Towing vessels 65 feet or less in length are not required to have a pilothouse alerter system.

§ 143.460 Towing machinery.

(a) Towing machinery such as capstans, winches, and other mechanical devices used to connect the towing vessel to the tow must be designed and installed to maximize control of the tow.

(b) Towing machinery for towing astern must have sufficient safeguards, *e.g.*, towing bitt with crossbar, to prevent the machinery from becoming disabled in the event the tow becomes out of line.

(c) Towing machinery used to connect the towing vessel to the tow must be suitable for its intended service. It must be capable of withstanding exposure to the marine environment, likely mechanical damage, static and dynamic loads expected during intended service, the towing vessel's horsepower, and arrangement of the tow.

(d) When a winch that has the potential for uncontrolled release under tension is used, a warning must be in place at the winch controls that indicates

this. When safeguards designed to prevent uncontrolled release are utilized, they must not be disabled.

(e) Each owner or managing operator must develop procedures to routinely examine, maintain, and replace capstans, winches, and other machinery used to connect the towing vessel to the tow.

Subpart C—Requirements for New Towing Vessels

§ 143.500 Applicability.

(a) This subpart applies to a new towing vessel, as defined in § 136.110 of this subchapter, unless it is an excepted vessel.

(b) Machinery or electrical systems of a novel design, unusual form, or special material must meet section § 143.210.

(c) Unless otherwise noted in §§ 143.515 and 143.520, new towing vessels must also meet the requirements of subpart B of this part.

§ 143.510 Verification of compliance with design standards.

Verification of compliance with the machinery and electrical design standards in this subpart is obtained by following the provisions in §§ 144.135 through 144.145 of this subchapter.

§ 143.515 Towing vessels built to recognized classification society rules.

(a) Except as noted in paragraph (c) of this section, a towing vessel classed by the American Bureau of Shipping (ABS), in accordance with the ABS Rules for Building and Classing Steel Vessels Under 90 Meters (295 Feet) in Length, or the ABS Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways (incorporated by reference, see § 136.112 of this subchapter), as appropriate for the intended service and routes, complies with this subpart.

(b) Except as noted in paragraph (c) of this section, a towing vessel built and equipped to conform to the ABS rules specified in paragraph (a) of this section and appropriate for the intended service and routes, but not currently classed, may be deemed by the OCMI or a TPO to be in compliance with this subpart if it can be shown that the vessel continues to conform to the ABS rules.

(c) A vessel that complies with this subpart as described in paragraph (a) or (b) must also meet the requirements described in §§ 143.585 through 143.595 or the requirements of § 143.600 if it moves tank barges carrying oil or hazardous material in bulk.

(d) Vessels meeting either paragraph (a) or (b) of this section are considered as being in compliance with subpart B of this part except for the readiness and testing requirements of § 143.245, and pilothouse alerter requirements of § 143.450.

(e) Towing vessels built to other recognized classification society rules, appropriate for the intended route and service, may be considered compliant with provisions in this subpart upon approval by the Coast Guard.

§ 143.520 Towing vessels built to American Boat and Yacht Council standards.

(a) Except as noted in paragraphs (b) and (c) of this section, a new towing vessel 65 feet (19.8 meters) or less in length built to conform with the American Boat and Yacht Council (ABYC) standards listed in this paragraph (a) (incorporated by reference, see § 136.112 of this subchapter), complies with this subpart:

(1) E–11 (2003)—AC & DC Electrical Systems on Boats;

(2) H–2 (2002)—Ventilation of Boats Using Gasoline;

(2) H–22 (2005)—Electric Bilge Pump Systems;

(3) H–24 (2007)—Gasoline Fuel Systems;

(4) H–25 (2003)—Portable Gasoline Fuel Systems;

(5) H–32 (2004)—Ventilation of Boats Using Diesel Fuel;

(6) H–33 (2005)—Diesel Fuel Systems;

(7) P–1 (2002)—Installation of Exhaust Systems for Propulsion and Auxiliary Engines; and

(8) P–4 (2004)—Marine Inboard Engines and Transmissions.

(b) New towing vessels, 65 feet or less in length, built to the ABYC standards specified in this section are considered compliant with subpart B of this part except for the readiness and testing requirements of § 143.245.

(c) If the vessel moves tank barges carrying oil or hazardous material in bulk, it must meet either the requirements described in §§143.585 through 143.595 or the requirements described in §143.600.

§ 143.540 Pumps, pipes, valves, and fittings for essential systems.

(a) Pumps, pipes, valves, and fittings in essential systems on vessels must meet ABS Rules for Building and Classing Steel Vessels Under 90 Meters (295 Feet) in Length (incorporated by reference, see §136.112 of this subchapter), Part 4, Chapter 4.

(b) Pumps, pipes, valves, and fittings in essential systems on towing vessels operating exclusively on rivers or intracoastal waterways may meet ABS Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways (incorporated by reference, see §136.112 of this subchapter), Part 4, Chapter 3.

§ 143.545 Pressure vessels.

(a) In lieu of meeting the requirements of §143.300, pressure vessels installed on new towing vessels must meet the requirements of this section.

(b) Pressure vessels over 5 cubic feet in volume and more than 15 psi maximum allowable working pressure must meet ABS Rules for Building and Classing Steel Vessels under 90 Meters (295 Feet) in Length (incorporated by reference, see §136.112 of this subchapter), Part 4, Chapter 1, Section 1.

§ 143.550 Steering systems.

(a) Steering systems must meet ABS Rules for Building and Classing Steel Vessels under 90 Meters (295 Feet) in Length (incorporated by reference, see §136.112 of this subchapter), Part 4, Chapter 3, Section 3.

(b) Steering systems on new towing vessels operating exclusively on rivers or intracoastal waterways may meet ABS Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways (incorporated by reference, see §136.112 of this subchapter), Part 4, Chapter 2, Section 3.

§ 143.555 Electrical power sources, generators, and motors.

(a) *General requirements.* (1) There must be a source of electrical power sufficient for:

(i) All essential systems as defined by §136.110 of this subchapter;

(ii) Minimum conditions of habitability; and

(iii) Other installed or portable systems and equipment.

(2) Generators and motors must be suitably rated for the environment where they operate, marked with their respective ratings, and suitably protected against overcurrent.

(3) A towing vessel, other than an excepted vessel, must have a backup or a second power source that has adequate capacity to supply power to essential alarms, lighting, radios, navigation equipment, and any other essential system identified by the cognizant OCMI or a TPO.

(b) *Specific requirements.* (1) The owner or managing operator must complete a load analysis that shows that the electrical power source is sufficient to power the sum of connected loads described in paragraph (a)(1) of this section utilizing an appropriate load factor for each load. A record of the analysis must be retained by the owner or managing operator.

(2) Installed generators and motors must have a data plate listing rated kilowatts and power factor (or current), voltage, and rated ambient temperature.

(3) Generators must be provided with overcurrent protection no greater than 115 percent of their rated current and utilize a switchboard or distribution panel.

(4) Motors must be provided with overcurrent protection that meets Parts I through VII, Article 430 of NFPA's National Electrical Code (NEC) (incorporated by reference, see §136.112 of this subchapter). Steering motor circuits must be protected as per Part 4 Chapter 6 Section 2, Regulation 11 (except 11.7) ofABS Rules for Building and Classing Steel Vessels Under 90 Meters (295 feet) in Length (incorporated by reference, see §136.112 of this subchapter).

(5) Generators and motors installed in machinery spaces must be certified

to operate in an ambient temperature of 50 °C or be derated, or it can be shown that 40 °C ambient temperature will not be exceeded in these spaces.

(6) Each generator and motor, except a submersible-pump motor, must be in an accessible space which is adequately ventilated and as dry as practicable, and must be mounted above the bilges.

(7) A generator driven by a main propulsion unit (such as a shaft generator) may be considered one of the power sources required by paragraph (a) of this section.

(8) Other than excepted vessels, each towing vessel must be arranged so that the following essential loads can be energized from two independent sources of electricity:

(i) High bilge level alarm required by §143.230;

(ii) Emergency egress lighting, unless the requirements of §143.410(b)(1) or (2) are met;

(iii) Navigation lights;

(iv) Pilothouse lighting;

(v) Engine room lighting;

(vi) Any installed radios and navigation equipment as required by §§140.715 and 140.725;

(vii) All distress alerting communications equipment listed in §§140.715 and 140.725;

(viii) Any installed fire detection system; and

(ix) Any essential system identified by the cognizant OCMI or TPO, if applicable.

(9) If a battery is used as the second source of electricity required by paragraph (b)(8) of this section, it must be capable of supplying the loads for at least three hours. There must be a means to monitor the condition of the battery backup power source.

§143.560 Electrical distribution panels and switchboards.

(a) Each distribution panel or switchboard on a towing vessel must be:

(1) In a location that is accessible, as dry as practicable, adequately ventilated, and protected from falling debris and dripping or splashing water; and

(2) Totally enclosed and of the deadfront type.

(b) Each switchboard accessible from the rear must be constructed to prevent a person's accidental contact with energized parts.

(c) Nonconductive mats or grating must be provided on the deck in front of each switchboard and, if it is accessible from the rear, on the deck behind the switchboard.

(d) Each un-insulated current-carrying part must be mounted on noncombustible, nonabsorbent, and high-dielectric insulating material.

(e) Equipment mounted on a door of an enclosure must be constructed or shielded so that a person will not come into accidental contact with energized parts.

§143.565 Electrical overcurrent protection other than generators and motors.

(a) *General requirement.* Power and lighting circuits on towing vessels must be protected by suitable overcurrent protection.

(b) *Specific requirements.* (1) Cable and wiring used in power and lighting circuits must have overcurrent protection that opens the circuit at the standard setting closest to 80 percent of the manufacturer's listed ampacity. Overcurrent protection setting exceptions allowed by NFPA's National Electrical Code (NEC), Article 240 (incorporated by reference, see §136.112 of this subchapter) may be employed.

(2) If the manufacturer's listed ampacity is not known, tables referenced in Article 310.15(B) of the NEC (incorporated by reference, see §136.112 of this subchapter) must be used, assuming a temperature rating of 75 °C and an assumed temperature of 50 °C for machinery spaces and 40 °C for other spaces.

(3) Overcurrent protection devices must be installed in a manner that will not open the path to ground in a circuit; only ungrounded conductors must be protected. Overcurrent protection must be coordinated such that an overcurrent situation is cleared by the circuit breaker or fuse nearest to the fault.

(4) Each transformer must have protection against overcurrent that meets Article 450 of the NEC (incorporated by reference, see §136.112 of this subchapter).

(5) On a towing vessel, other than an excepted vessel as defined in §136.110 of this subchapter, essential systems and non-essential systems must not be on the same circuit or share the same overcurrent protective device.

§ 143.570 Electrical grounding and ground detection.

(a) An ungrounded distribution system must be provided with a ground detection system located at the main switchboard or distribution panel that provides continuous indication of circuit status to ground, with a provision to temporarily remove the indicating device from the reference ground.

(b) A dual voltage or grounded electrical distribution system must have the neutral suitably grounded. There must be only one connection to ground, regardless of the number of power sources. This connection must be at the main switchboard or distribution panel.

(c) On a metallic towing vessel, a grounded distribution system must be grounded to the hull. This grounded system must be connected to a common, non-aluminum ground plate. The ground plate must have only one connection to the main switchboard or distribution panel, and the connection must be readily accessible for examination.

(d) On a nonmetallic towing vessel, all electrical equipment must be grounded to a common ground. Multiple ground plates bonded together are acceptable.

(e) Each grounding conductor of a cable must be identified by one of the following means:

(1) Green braid or green insulation; or

(2) Stripping the insulation from the entire exposed length of the grounding conductor.

(f) A towing vessel's hull may not carry current as a conductor, except for an impressed-current cathodic-protection system or a battery system used to start an engine.

(g) Cable armor may not be used to ground electrical equipment or systems.

(h) Each receptacle outlet and attachment plug for a portable lamp, tool, or similar apparatus operating at 100 or more volts must have a grounding pole and a grounding conductor in the portable cord.

(i) In a grounded distribution system, only grounded, three-prong appliances may be used. This does not apply to double-insulated appliances or tools and appliances of 50 volts or less.

§ 143.575 Electrical conductors, connections, and equipment.

(a) Each cable and wire on a towing vessel must be installed to meet the following requirements:

(1) Each conductor must have sufficient current-carrying capacity for the circuit in which it is used.

(2) Cable hangers for overhead and vertical cable runs must be installed with metal supports and retention devices at least every 48 inches.

(3) Each wire and cable run must be installed in a manner to prevent contact with personnel, mechanical hazards, and leaking fluids. Wire and cable runs must not be installed in bilges, across a normal walking path, or less than 24 inches from the path of movable machinery (*e.g.*, cranes, elevators, forktrucks, etc., where the machinery location can change) unless adequately protected.

(4) Connections and terminations must be suitable for the installed conductors, and must retain the original electrical, mechanical, flame-retarding, and where necessary, fire-resisting properties of the conductor. If twist-on types of connectors are used, the connections must be made within an enclosure and the insulated cap of the connector must be secured to prevent loosening due to vibration. Twist-on type of connectors may not be used for making joints in cables, facilitating a conductor splice, or extending the length of a circuit.

(5) Each cable and wire must be installed so as to avoid or reduce interference with radio reception and compass indication.

(6) Each cable and wire must be protected from the weather.

(7) Each cable and wire must be supported in order to avoid chafing or other damage.

(8) Each cable and wire must be protected by metal coverings or other

suitable means, if in areas subject to mechanical abuse.

(9) Each cable and wire must be suitable for low temperature and high humidity, if installed in refrigerated compartments.

(10) Each cable and wire must be located outside a tank, unless it supplies power to equipment in the tank.

(11) If wire is installed in a tank, it must have sheathing or wire insulation compatible with the fluid in a tank.

(b) Extension cords must not be used as a permanent connection to a source of electrical power.

(c) Multi-outlet adapters (power strips) may not be connected to other adapters (''daisy-chained''), or otherwise used in a manner that could overload the capacity of a receptacle.

§ 143.580 Alternative electrical installations.

In lieu of meeting the requirements of §§ 143.555 through 143.575, a vessel may meet the following:

(a) ABS Rules for Building and Classing Steel Vessels Under 90 Meters (295 Feet) in Length (incorporated by reference, see § 136.112 of this subchapter), Part 4, Chapter 6; or

(b) ABS Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways (incorporated by reference, see § 136.112 of this subchapter), Part 4, Chapter 5, if they operate exclusively on rivers or intracoastal waterways.

§ 143.585 General requirements for propulsion, steering, and related controls on vessels that move tank barges carrying oil or hazardous material in bulk.

(a) There must be an alternate means to control the propulsion and steering system which must:

(1) Be independent of the primary control required by § 143.225;

(2) Be located at or near the propulsion and steering equipment; and

(3) Be readily accessible and suitable for prolonged operation.

(b) There must be a means to communicate between each operating station and the alternate propulsion and steering controls.

(c) There must be a means to stop each propulsion engine and steering motor from each operating station.

(d) The means to monitor the amount of thrust, rudder angle, and if applicable, direction (ahead or astern) of thrust must be independent of the controls required by § 143.225.

(e) The propulsion control system required by § 143.225 must be designed so that, in the event of a single failure of any component of the system, propeller speed and direction of thrust are maintained or reduced to zero.

(f) On a towing vessel with an integrated steering and propulsion system, such as a Z-drive, the control system required by § 143.225 must be designed so that, in the event of a single failure of any component of the system, propeller speed and direction of thrust are maintained or the propeller speed is reduced to zero.

(g) An audible and visual alarm must actuate at each operating station when:

(1) The propulsion control system fails;

(2) A non-follow up steering control system fails, if installed; and

(3) The ordered rudder angle does not match the actual rudder position on a follow-up steering control system, if installed. This alarm must have an appropriate delay and error tolerance to eliminate nuisance alarms.

(h) Alarms must be separate and independent of the control system required by § 143.225.

(i) A means of communication must be provided between each operating station and any crewmember(s) required to respond to alarms.

(j) The two sources of electricity required by § 143.555(a)(3) and (b)(8) must be capable of powering electrical loads needed to maintain propulsion, steering, and related controls for not less than 3 hours.

(k) The second source of supply required by § 143.555(a)(3) must automatically start to help restore or maintain power to propulsion, steering, and related controls when the main power source fails.

(l) Propulsion, steering, or related controls that are directly reliant on stored energy, such as compressed air, battery power, or hydraulic pressure, must have two independent stored energy systems, such as compressed air cylinders, battery banks, or hydraulic

cylinders, that are capable of maintaining the vessel's propulsion, steering, and related controls.

(m) After a power failure, electrical motors used to maintain propulsion and steering must automatically restart when power is restored, unless remote control starting is provided at the operating station.

§ 143.590 Propulsor redundancy on vessels that move tank barges carrying oil or hazardous material in bulk.

(a) A towing vessel must be provided with at least two independent propulsors unless the requirements of § 143.595 are met.

(b) There must be independent controls for each propulsor at each operating station.

(c) In the event of a failure of a single propulsor, the remaining propulsor(s) must have sufficient power to maneuver the vessel to a safe location.

§ 143.595 Vessels with one propulsor that move tank barges carrying oil or hazardous material in bulk.

(a) A towing vessel must have independent, duplicate vital auxiliaries. For the purpose of this section, vital auxiliaries are the equipment necessary to operate the propulsion engine, and include fuel pumps, lubricating oil pumps, and cooling water pumps. In the event of a failure or malfunction of any single vital auxiliary, the propulsion engine must continue to provide propulsion adequate to maintain control of the tow.

(b) In the event of a failure, the corresponding independent duplicate vital auxiliary, described in paragraph (a) of this section, must be fully capable of assuming the operation of the failed unit.

§ 143.600 Alternative standards for vessels that move tank barges carrying oil or hazardous material in bulk.

In lieu of meeting §§ 143.585 through 143.595, a towing vessel may comply with Sections 7–5 (class ABCU) and 3–5 (class R2) of Part 4 of the ABS Rules for Building and Classing Steel Vessels Under 90 Meters (295 Feet) in Length (incorporated by reference, see § 136.112 of this subchapter), except that a vessel that operates exclusively on rivers or intracoastal waterways does not need to comply with 4–7–4/3.9 and the automatic day tank fill pump requirement of 4–7–4/25.3.

§ 143.605 Demonstration of compliance on vessels that move tank barges carrying oil or hazardous material in bulk.

(a) The owner or managing operator of each towing vessel must devise test procedures that demonstrate compliance with the design and engineering requirements prescribed in this subpart.

(b) The tests required in paragraph (a) of this section must be satisfactorily conducted and witnessed by the cognizant OCMI or a TPO. A record of the tests must be retained by the owner or managing operator and be available upon request of the cognizant OCMI or TPO.

PART 144—CONSTRUCTION AND ARRANGEMENT

Subpart A—General

Sec.

Subpart B—Structure

Subpart C—Stability and Watertight Integrity

AUTHORITY: 46 U.S.C. 3103, 3301, 3306, 3308, 3316, 8104, 8904; 33 CFR 1.05; DHS Delegation No. 0170.1.

SOURCE: USCG–2006–24412, 81 FR 40101, June 20, 2016, unless otherwise noted.

Subpart A—General

§ 144.100 Purpose.

This part details the requirements for design, construction and arrangement, and verification of compliance with this part, including document review.

§ 144.105 Applicability and delayed implementation.

This part applies to each towing vessel subject to this subchapter. Note that §§ 144.200 and 144.300 only apply to an existing vessel and that the following sections only apply to a new vessel: §§ 144.205, 144.305, 144.310, 144.405, 144.410, 144.420, 144.425, 144.430, 144.910, and 144.920.

(a) An existing towing vessel must comply with § 144.320 starting July 20, 2016 and it must comply with the other applicable requirements in this part no later than either July 20, 2018 or the date the vessel obtains a Certificate of Inspection (COI), whichever date is earlier.

(b) The delayed implementation provisions in paragraph (a) of this section do not apply to a new towing vessel.

(c) Alterations or modifications made to the structure or arrangements of an existing vessel that are a major conversion, made on or after the July 20, 2017, must comply with the regulations applied to a new towing vessel of this part insofar as is reasonable and practicable. Repairs conducted on an existing vessel, resulting in no significant changes to the original structure or arrangement of the vessel, must comply with the standards applicable to the vessel at the time of construction or, as an alternative, with the regulations in this part.

[USCG–2006–24412, 81 FR 40101, June 20, 2016; 81 FR 47312, July 21, 2016]

§ 144.120 A classed vessel.

A vessel currently classed by a recognized classification society is deemed to be in compliance with the requirements of subparts B and C of this part.

§ 144.125 A vessel with a load line.

A vessel with a valid load line certificate issued in accordance with subchapter E of this chapter may be deemed in compliance with the requirements of subparts B and C of this part.

§ 144.130 A vessel built to the International Convention for the Safety of Life at Sea, 1974, as amended, requirements.

A vessel built to the International Convention for the Safety of Life at

Sea, 1974, as amended, is considered to be in compliance with this part.

§ 144.135 Verification of compliance with design standards.

Verification of compliance with the construction and arrangement design standards of this part must be performed according to the following table:

TABLE 144.135—VERIFICATION OF COMPLIANCE WITH DESIGN STANDARDS

If the vessel is—	Then the applicable requirements must be met—
(a) A new vessel,	Before the COI is issued.
(b) A vessel to undergo a major conversion or alteration to the hull, machinery, or equipment that may affect the vessel's safety,	Before the major conversion or alteration is performed.
(c) A vessel on which a new installation that is not a ''replacement in kind'',	Before the new installation is performed.

[USCG–2006–24412, 81 FR 40101, June 20, 2016; 81 FR 47312, July 21, 2016]

§ 144.140 Qualifications.

Use the following table to determine the individual or entity that may conduct a verification of compliance with design standards required by § 144.135.

TABLE 144.140

Verification of compliance with design standards may be performed by—	Provided that—
(a) A registered professional engineer (P.E.) licensed by one of the states of the United States or the District of Columbia;	The PE ensures he or she does not exceed the scope of his or her P.E. license.
(b) An authorized classification society that has been delegated the authority to issue the SOLAS Cargo Ship Safety Construction Certificate under 46 CFR 8.320;	The authorized classification society ensures that the employees that perform the verification of compliance holds proper qualifications for the type of verification performed.
(c) The Coast Guard	

§ 144.145 Procedures for verification of compliance with design standards.

(a) Verification of compliance with design standards, when required by § 144.135, must be performed by an individual or entity who meets the requirements of § 144.140.

(b) Verification of compliance with design standards must be based on objective evidence of compliance with the applicable requirements and include:

(1) A description of the vessel's intended service and route;

(2) The standards used for the vessel's design and construction;

(3) Deviations from the standards used, if any;

(4) A statement that the vessel is suitable for the intended service and route; and

(5) The identification of the individual or entity in Table 144.140 of § 144.140 who conducted the verification of compliance.

(c) Verification of compliance with design standards must include review and analyses of sufficient plans, drawings, schematics, calculations, and other documents to ensure the vessel complies with the standards used. The plans must be stamped with the seal authorized for use by the individual or entity performing the verification of compliance, or otherwise indicate that they have been reviewed and determined to meet the applicable standards by an individual or entity who meets the requirements of § 144.140.

(d) A copy of the verified plan must be provided to the cognizant Officer in Charge, Marine Inspection (OCMI) and the third-party organization (TPO) conducting the surveys, if applicable, except as provided in paragraph (e) of this section.

(e) Plans verified by an authorized classification society need only be provided to the Coast Guard upon request.

(f) If the vessel is a new vessel, a copy of the verified plan must be available at the construction site.

(g) As referred to in this section, the term plan may include, but is not limited to drawings, documents, or diagrams of the following:

(1) Outboard profile.

(2) Inboard profile.

(3) Arrangement of decks.

(4) Midship section and scantling plans.

(5) Survival craft embarkation stations.

(6) Machinery installation, including, but not limited to:

(i) Propulsion and propulsion control, including shaft details;

(ii) Steering and steering control, including rudder details;

(iii) Ventilation diagrams;

(iv) Fuel transfer and service system, including tanks;

(v) Piping systems including: bilge, ballast, hydraulic, combustible and flammable liquids, vents, and overflows; and

(vi) Hull penetrations and shell connections;

(7) Electrical installation including, but not limited to:

(i) Elementary one-line diagram of the power system;

(ii) Cable lists;

(iii) Type and size of generators and prime movers;

(iv) Type and size of generator cables, bus-tie cables, feeders, and branch circuit cables;

(v) Power and lighting panelboards with number of circuits and rating of energy consuming devices;

(vi) Capacity of storage batteries;

(vii) Rating of circuit breakers and switches, interrupting capacity of circuit breakers, and rating and setting of overcurrent devices; and

(viii) Electrical plant load analysis as required by §143.555 of this subchapter.

(8) Lifesaving equipment locations and installation;

(9) Fire protection equipment installation including, but not limited to:

(i) Fire main system plans and calculations;

(ii) Fixed gas fire extinguishing system plans and calculations;

(iii) Fire detecting system and smoke detecting system plans;

(iv) Sprinkler system diagram and calculations; and

(v) Portable fire extinguisher types, sizes, and locations;

(10) Lines and offsets, curves of form, cross curves of stability, tank capacities including size and location on vessel, and other stability documents needed to show compliance; and

(11) Towing arrangements.

§144.155 Verification of compliance with design standards for a sister vessel.

(a) Verification of compliance required by §144.135 is not required for a sister vessel, provided that:

(1) The original vessel has been verified as complying with this part;

(2) The owner authorizes the use of the plans for the original vessels for the new construction of the sister vessel;

(3) The standards used in the design and construction of the original vessel have not changed since the original verification of compliance;

(4) The sister vessel is built to the same verified plans, drawings, schematics, calculations, and other documents and equipped with machinery of the same make and model as the original vessel, and has not been subsequently modified;

(5) The sister vessel is built in the same shipyard facility as the original vessel; and

(6) For a sister vessel subject to a stability standard, that the conditions in Table 144.155 of this section are met:

TABLE 144.155

If—	Then—
(i) The delivery date of the sister vessel is not more than 2 years after a previous stability test date of either the original vessel or an earlier sister vessel,	The approved lightweight characteristics of that earlier vessel are adopted by the sister vessel;
(ii) Paragraph (a)(6)(i) of this section does not apply, and the lightweight characteristics determined from a deadweight survey of the sister vessel are shown to meet both the following criteria: (A) the lightweight displacement differs by not more than 3 percent of the earlier vessel's lightweight displacement, and (B) the longitudinal center of gravity (LCG) differs by not more than 1 percent of the length between perpendiculars (LBP) of the earlier vessel's LCG,	The vertical center of gravity (VCG) of the earlier vessel is adopted by the sister vessel and used with the lightweight displacement and LCG determined from the deadweight survey of the sister vessel;
(iii) Neither paragraph (a)(6)(i) nor (ii) of this section apply because both the criteria in paragraphs (a)(6)(ii)(A) and (B) of this section are not met and lightweight characteristics were determined from a stability test on either the original vessel or a sister vessel,	The vessel must undergo a stability test in accordance with 46 CFR part 170, subpart F;
(iv) No vessel of the class of sister vessels previously underwent a stability test,	One vessel of the class must undergo a stability test in accordance with 46 CFR part 170, subpart F, and each sister vessel to which a stability standard applies must meet either paragraph (a)(6)(ii) or (iii) of this section.

(b) A statement that verifies sister vessel status for each element of paragraph (a) of this section from an individual or entity meeting the requirements of §144.140 must be retained and produced upon request.

§144.160 Marking.

(a) The hull of each documented vessel must be marked as required by part 67 of this chapter.

(b) The hull of each undocumented vessel must be marked with its name and hailing port.

(c) A vessel complying with either §144.300(a) or §144.305 must have draft marks that meet the requirements of §97.40–10 of this chapter.

(d) Each vessel assigned a load line must have the load line marks and the deck line permanently scribed or embossed as required by subchapter E of this chapter.

(e) Each watertight door and watertight hatch must be marked on both sides in clearly legible letters at least 25 millimeters (1 inch) high: ''WATERTIGHT DOOR—KEEP CLOSED'' or ''WATERTIGHT HATCH—KEEP CLOSED''.

(f) Each escape hatch and emergency exit used as means of escape must be marked on both sides in clearly legible letters at least 50 millimeters (2 inches) high: ''EMERGENCY EXIT, KEEP CLEAR''.

Subpart B—Structure

§144.200 Structural standards for an existing vessel.

An existing vessel may be deemed by the OCMI, or TPO, to be in compliance with this subpart provided that either:

(a) The vessel is built, equipped, and maintained to conform to the rules of a recognized classification society appropriate for the intended service and routes, but not classed; or

(b) The vessel has been both in satisfactory service insofar as structural adequacy is concerned and does not cause the structure of the vessel to be questioned by either the OCMI, or TPO engaged to perform an audit or survey.

§144.205 Structural standards for a new vessel.

(a) Except as provided in paragraphs (b) and (c) of this section, a new vessels must comply with the standards established by the American Bureau of Shipping (ABS) as provided in the following table.

TABLE 144.205(a)—STRUCTURAL STANDARDS FOR A NEW VESSEL

For a new vessel to be certificated for service on—	ABS Rules for Building and Classing—
(1) Lakes, bays, and sounds, limited coastwise, coastwise, and oceans routes;	Steel Vessels Under 90 Meters (295 Feet) in Length (incorporated by reference, see §136.112 of this subchapter) apply; or
(2) Rivers or intracoastal waterways routes.	Steel Vessels for Service on Rivers and Intracoastal Waterways (incorporated by reference, see §136.112 of this subchapter) apply.

(b) Alternate design standards to comply with this subpart may be approved in accordance with §136.115 of this subchapter.

(c) The current standards of a recognized classification society, other than ABS, may be used provided they are accepted by the Coast Guard as providing an equivalent level of safety.

(d) The structural standard selected must be applied throughout the vessel including design, construction, installation, maintenance, alteration, and repair. Deviations are subject to approval by the Commanding Officer, Marine Safety Center.

§144.215 Special consideration.

The cognizant OCMI may give special consideration to the structural requirements for a vessel if that vessel is:

(a) Not greater than 65 feet in length;

(b) Operating exclusively within a limited geographic area; or

(c) Of an unusual design not contemplated by the rules of the American Bureau of Shipping or other recognized classification society.

Subpart C—Stability and Watertight Integrity

§144.300 Stability standards for an existing vessel.

(a) The owner or managing operator of an existing vessel operating under a

stability document must be able to readily produce a copy of such document.

(b) The owner or managing operator of an existing vessel not operating under a stability document must be able to show at least one of the following:

(1) The vessel's operation or a history of satisfactory service does not cause the stability of the vessel to be questioned by either the Coast Guard or a TPO engaged to perform an audit or survey.

(2) The vessel performs successfully on operational tests to determine whether the vessel has adequate stability and handling characteristics.

(3) The vessel has a satisfactory stability assessment by means of giving due consideration to each item that impacts a vessel's stability characteristics which include, but are not limited to, the form, arrangement, construction, number of decks, route, and operating restrictions of the vessel.

§ 144.305 Stability standards for a new vessel.

Each new vessel must meet the applicable stability requirements of part 170 and, if applicable, of part 173, subpart E, of this chapter in addition to the requirements in the following table:

TABLE 144.305—STABILITY STANDARDS FOR A NEW VESSEL

Each new vessel certificated to operate on—	Must meet the requirements of—
(a) Protected waters	§ 170.173(e)(2) of this chapter.
(b) Partially protected waters	§§ 170.170 and 170.173(e)(1) of this chapter.
(c) Exposed waters or that is assigned a load line.	§§ 170.170 and 174.145 of this chapter.

§ 144.310 Lifting requirements for a new vessel.

Each new vessel equipped for lifting must meet the requirements of part 173, subpart B, of this chapter.

§ 144.315 Weight and moment history requirements for a vessel with approved lightweight characteristics.

(a) A weight and moment history of changes to the vessel since approval of its lightweight characteristics (displacement, Longitudinal Center of Gravity (LCG) and Vertical Center of Gravity (VCG)) must be maintained. All weight modifications to the vessel (additions, removals, and relocations) including a calculation of the aggregate weight change (absolute total of all additions, removals, and relocations) must be recorded in the history, along with a description of the change(s), when and where accomplished, moment arms, etc. After each modification, the lightweight characteristics must be recalculated.

(b) When the aggregate weight change is more than 2 percent of the vessel's approved lightweight displacement, or the recalculated change in the vessel's lightweight LCG is more than 1 percent of the LBP, a deadweight survey must be performed to determine the vessel's current lightweight displacement and LCG. Use the following table to determine when the deadweight survey results or the vessel's aggregate weight change requires the vessel to undergo a specified stability test:

TABLE 144.315

If—	Then—
(1) The deadweight survey results are both within 1 percent of the recalculated lightweight displacement and within 1 percent LBP of the recalculated lightweight LCG,	the recalculated lightweight VCG can be accepted as accurate;
(2) The deadweight survey results do not meet the criteria of paragraph (b)(1) of this section,	the vessel must undergo a stability test in accordance with 46 CFR 170, subpart F;
(3) The aggregate weight change is more than 10 percent of the vessel's approved lightweight displacement,	the vessel must undergo a stability test in accordance with 46 CFR 170, subpart F.

§ 144.320 Watertight or weathertight integrity.

(a) Each vessel fitted with installed bulwarks around the exterior of the main deck must have sufficient freeing ports or scuppers or a combination of freeing ports and scuppers to allow water to run off the deck quickly without adversely affecting the stability of the vessel.

(b) Closure devices must be provided for deckhouse or hull penetrations, which open to the exterior of the vessel and which may allow water to enter the vessel. These devices must be suitable for the expected route.

§ 144.330 Review of a vessel's watertight and weathertight integrity.

The cognizant OCMI may require review of a vessel's watertight and weathertight integrity. This review may be performed by an individual who meets the requirements of § 144.140. The review may include an examination of a plan that shows the original placement of decks and bulkheads.

Subpart D—Fire Protection

§ 144.400 Applicability.

Except for § 144.415, which applies to each new and existing vessel, this subpart applies to each new towing vessel.

§ 144.405 Fire hazards to be minimized.

Each vessel must be designed and constructed to minimize fire hazards insofar as reasonable and practicable.

§ 144.410 Separation of machinery and fuel tank spaces from accommodation spaces.

Machinery and fuel tank spaces must be separated from accommodation spaces by bulkheads. Doors may be installed provided they are the self-closing type.

§ 144.415 Combustibles insulated from heated surfaces.

Internal combustion engine exhaust ducts, galley exhaust ducts and similar ignition sources must be insulated with noncombustible insulation if less than 450 mm (18 inches) away from combustible material. Installations in accordance with ABYC P–1 or NFPA 302 (incorporated by reference, see § 136.112 of this subchapter) will be considered as meeting the requirements of this section.

§ 144.425 Waste receptacles.

Unless other means are provided to ensure that a potential waste receptacle fire would be limited to the receptacle, waste receptacles must be constructed of noncombustible materials with no openings in the sides or bottom.

§ 144.430 Mattresses.

Each mattress must comply with either:

(a) The Consumer Product Safety Commission Standard for Mattress Flammability (FF 4–72, Amended), 16 CFR part 1632, subpart A, and not contain polyurethane foam; or

(b) IMO Resolution A.688(17) (incorporated by reference, see § 136.112 of this subchapter) in which case the mattress may contain polyurethane foam.

Subpart E—Emergency Escape

§ 144.500 Means of escape.

Where practicable and except as provided in § 144.515, each space where crew may be quartered or normally employed must have at least two means of escape. Arrangements on an existing vessel may be retained if it is impracticable or unreasonable to provide two means of escape.

§ 144.505 Location of escapes.

The two required means of escape must be widely separated and, if possible, at opposite ends or sides of the space. Means may include normal and emergency exits, passageways, stairways, ladders, deck scuttles, doors, and windows.

§ 144.510 Window as a means of escape.

On a vessel of 65 feet (19.8 meters) or less in length, a window or windshield of sufficient size and proper accessibility may be used as one of the required means of escape from an enclosed space, provided it:

(a) Does not lead directly overboard;

(b) Is suitably marked; and

(c) Has a means to open the window or break the glass.

§ 144.515 One means of escape required.

Only one means of escape is required from a space where:

(a) The space has a deck area less than 30 square meters (322 square feet);

(b) There is no stove, heater, or other source of fire in the space;

(c) The means of escape is located as far as possible from a machinery space or fuel tank; and

(d) If an accommodation space, the single means of escape does not include a deck scuttle or a ladder.

Subpart F—Ventilation

§ 144.600 Ventilation for accommodations.

Each accommodation space on a vessel must be ventilated in a manner suitable for the purpose of the space.

§ 144.605 Means to stop fans and close openings.

Means must be provided for stopping each fan in a ventilation system serving machinery spaces and for closing, in case of fire, each doorway, ventilator, and annular space around funnels and other openings into such spaces.

§ 144.610 Ventilation in a vessel more than 65 feet in length.

A vessel of more than 65 feet (19.8 meters) in length with overnight accommodations must have a mechanical ventilation system unless a natural system, such as opening windows, portholes, or doors, will provide adequate ventilation in ordinary weather.

Subpart G—Crew Spaces

§ 144.700 General requirements.

(a) A crew accommodation space and a work space must be of sufficient size, adequate construction, and with suitable equipment to provide for the safe operation of the vessel and the protection and accommodation of the crew in a manner practicable for the size, facilities, service, route, and modes of operation of the vessel.

(b) The deck above a crew accommodation space must be located above the deepest load waterline.

§ 144.710 Overnight accommodations.

Overnight accommodations must be provided for crewmembers if it is operated more than 12 hours in a 24-hour period, unless the crew is put ashore and the vessel is provided with a new crew.

§ 144.720 Crew rest consideration.

The condition of the crew accommodations must consider the importance of crew rest. Factors to consider include vibrations, ambient light, noise levels, and general comfort. Every effort must be made to ensure that quarters help provide a suitable environment for sleep and off-duty rest.

Subpart H—Rails and Guards

§ 144.800 Handrails and bulwarks.

(a) Rails or equivalent protection must be installed near the periphery of all decks accessible to crew. Equivalent protection may include lifelines, wire rope, chains, and bulwarks that provide strength and support equivalent to fixed rails.

(b) In areas where space limitations make deck rails impractical, such as at narrow catwalks in way of deckhouse sides, hand grabs may be substituted.

§ 144.810 Storm rails.

On a vessel in oceans or coastwise service, suitable storm rails or hand grabs must be installed in all passageways and at the deckhouse sides where persons onboard might have normal access.

§ 144.820 Guards in dangerous places.

An exposed hazard such as gears and rotating machinery, must be protected by a cover, guard or rail. This is not meant to restrict access to towing equipment such as winches, drums, towing gear or steering compartment equipment necessary for the operation of the vessel.

§ 144.830 Protection against hot piping.

Each exhaust pipe from an internal combustion engine which is within reach of personnel must be insulated or otherwise guarded to prevent burns. On a new vessel, each pipe that contains vapor, gas, or liquid that has a temperature exceeding 150 °F (65.5 °C) which is within reach of personnel must be insulated where necessary or otherwise guarded to prevent injury.

Subpart I—Visibility

§ 144.905 Operating station visibility.

(a) Windows and other openings at the operating station must be of sufficient size and properly located to provide a clear field of vision for safe operation in any condition.

(b) Means must be provided to ensure that windows immediately forward of the operating station in the pilothouse allow for adequate visibility to ensure safe navigation regardless of weather conditions. This may include mechanical means such as windshield wipers, defoggers, clear-view screens, or other such means, taking into consideration the intended route of the vessel.

(c) The field of vision from the operating station on a new vessel must extend over an arc from dead ahead to at least 60 degrees on either side of the vessel.

(d) If a new vessel is towing astern, the operating station must be provided with a view aft.

(e) In a new vessel, glass or other glazing material used in windows at the operating station must have a light transmission of not less than 70 percent according to Test 2 of ANSI/SAE Z 26.1–1996 (incorporated by reference, see §136.112 of this subchapter) and must comply with Test 15 of ANSI/SAE Z 26.1–1996 for Class I Optical Deviation.

§ 144.920 Window or portlight strength in a new vessel.

(a) Each window or portlight, and its means of attachment to the hull or the deckhouse, must be capable of withstanding the maximum expected load from wind and waves, due to its location on the vessel and the vessel's authorized route.

(b) Any covering or protection placed over a window or porthole that could be used as a means of escape must be able to be readily removed or opened from within the space.

(c) Glass and other glazing materials used in windows of a new towing vessel must be materials that will not break into dangerous fragments if fractured.