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must comply with § 56.50-96 of this chapter.

(b) Approved metallic flexible connections may be located below the deepest-load waterline if the system is a closed loop below the waterline and if its vent is located above the waterline.

(c) Fillet welds may be used in the attachment of channels and half-round pipe sections to the bottom of the vessel.

(d) Short lengths of approved non-metallic flexible hose fixed by metallic or non-metallic hose-clamps may be used at machinery connections if—

(1) The clamps are of a corrosion-resistant material;

(2) The clamps do not depend on spring tension for their holding power; and

(3) Two of the clamps are used on each end of the hose, except that one clamp may be used on an end expanded or beaded to provide a positive stop against hose slippage.

(4) The clamps are resistant to vibration, high temperature, and brittleness.

[CGD 82-004 and CGD 86-074, 62 FR 49331, Sept. 19, 1997, as amended by USCG-2000-7790, 65 FR 58463, Sept. 29, 2000]

§ 128.430 Non-integral keel cooler installations.

(a) Each hull penetration for a non-integral keel cooler installation must be made through a cofferdam or at a seachest and must be provided with isolation valves fitted as close to the sea inlet as possible.

(b) Each non-integral keel cooler must be protected against damage from debris and grounding by protective guards or by recessing the cooler into the hull.

[CGD 82-004 and CGD 86-074, 62 FR 49331, Sept. 19, 1997, as amended by USCG-2000-7790, 65 FR 58463, Sept. 29, 2000]

§ 128.440 Bilge systems.

(a) Except as provided by this section, each bilge system must comply with §§ 56.50-50 and 56.50-55 of this chapter.

(b) If the steering room, engine room, centerline passageway, forward machinery space, and compartment containing the dry-mud tanks are the only below-deck spaces that must be fitted

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with bilge suctions, the vessel may be equipped to the standards of §§ 56.50-50 and 56.50-57 of this chapter applicable to a dry-cargo vessel of less than 55 meters (180 feet) in length.

§ 128.450 Liquid-mud systems.

(a) Liquid-mud piping systems may use resiliently seated valves of Category A to comply with §§ 56.20-15 and 56.50-60 of this chapter.

(b) Tanks for oil-based liquid mud must be fitted with tank vents equipped with flame screens. Vents must not discharge to the interior of the vessel.

PART 129—ELECTRICAL INSTALLATIONS

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Subpart A—General Provisions

§ 129.100 General.

This part contains requirements for the design, construction, and installation of electrical equipment and systems including power sources, lighting, motors, miscellaneous equipment, and safety systems.

§ 129.110 Applicability.

Except as specifically provided in this part, electrical installations on OSVs must comply with subchapter J of this chapter.

§ 129.120 Alternative standards.

(a) An OSV of 19.8 meters (65 feet) in length or less may meet the following requirements of the American Yacht and Boat Council Projects, where applicable, instead of § 129.340 of this part:

- (1) E-1, Bonding of Direct Current Systems.
- (2) E-8, AC Electrical Systems on Boats.
- (3) E-9, DC Electrical Systems on Boats.

(b) An OSV with an electrical installation operating at a potential of less than 50 volts may comply with 33 CFR 183.430 instead of § 129.340 of this part.

Subpart B—General Requirements

§ 129.200 Design, installation, and maintenance.

Electrical equipment on a vessel must be designed, installed, and maintained to—

(a) Provide services necessary for safety under normal and emergency conditions;

(b) Protect crew members, offshore workers, and the vessel from electrical hazards, including fire, caused by or originating in electrical equipment and electrical shock;

(c) Minimize accidental personal contact with energized parts; and

(d) Prevent electrical ignition of flammable vapors.

§ 129.210 Protection from wet and corrosive environments.

(a) Electrical equipment used in the following spaces must be drip-proof:

- (1) A machinery space.
- (2) A space normally exposed to splashing, water wash-down, or other wet conditions within a galley, a laundry, or a public washroom or toilet room that has a bath or shower.
- (3) Every other space with similar wet conditions.

(b) Electrical equipment exposed to the weather must be watertight.

(c) Electrical equipment exposed to corrosive environments must be of suitable construction and must be resistant to corrosion.

§ 129.220 Basic safety.

(a) Electrical equipment and installations must be suitable for the roll, pitch, and vibration of the vessel under way.

(b) All equipment, including switches, fuses, and lampholders, must be suitable for the voltage and current used.

(c) Receptacle outlets of the type providing a grounded pole or a specific direct-current polarity must be of a configuration that does not permit improper connection.

(d) Electrical equipment and circuits must be clearly marked and identified.

(e) Any cabinet, panel, box, or other enclosure containing more than one source of power must be fitted with a sign warning persons of this condition and identifying the circuits to be disconnected.

Subpart C—Power Sources and Distribution Systems

§ 129.310 Power sources.

(a)(1) Each vessel that relies on electricity to power the following loads must be arranged so that the loads can

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be energized from at least two sources of electricity:

(i) Any system identified as a vital system in §128.130(a) of this subchapter.

(ii) Interior lights.

(iii) Communication systems.

(iv) Navigational equipment and lights.

(v) Fire-protection equipment.

(2) A vessel with batteries of enough capacity for 3 hours of continuous operation to supply the loads specified in paragraph (a)(1) of this section, and with a generator or alternator driven by a propulsion engine, complies with paragraph (a)(1) of this section.

(b) Where a generator driven by a propulsion engine is used as a source of electrical power, no speed change, throttle movement, or change in direction of the propeller shaft of the vessel may interrupt power to any of the loads specified in paragraph (a)(1) of this section.

§ 129.315 Power sources for OSVs of 100 or more gross tons.

(a) The requirements of this section apply instead of those in subpart 111.10 of this chapter.

(b) If a generator provides electrical power for any system identified as a vital system by §128.130(a) of this subchapter, at least two power-generating sets must be provided. At least one set must be independent of the main propulsion plant. A generator not independent of the main propulsion plant must comply with §111.10-4(d) of this chapter. With any one generating set stopped, the remaining set or sets must provide the power necessary for the loads required by this section.

§ 129.320 Generators and motors.

(a) Each generator and motor, except a submersible-pump motor, must be—

(1) In an accessible space, adequately ventilated and as dry as practicable; and

(2) Mounted above the bilges to avoid damage by splash and to avoid contact with low-lying vapors.

(b) Each generator and motor must be designed for an ambient temperature of 50 °C (122 °F), except that—

(1) If the ambient temperature, in the space where a generator or motor is,

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does not exceed 40 °C (104 °F) under normal operating conditions, the generator or motor may be designed for an ambient temperature of 40 °C (104 °F); and

(2) A generator or motor designed for an ambient temperature of 40 °C (104 °F) may be used in a location where the ambient temperature is 50 °C (122 °F), if the generator or motor is derated to 80 percent of the full-load rating and if the rating or setting of the overcurrent devices of the generator or motor is reduced accordingly.

(c) For each generator rated at 50 volts or more, a voltmeter and an ammeter used for measuring voltage and current while the generator is in operation must be provided. For each alternating-current generator, a means for measuring frequency must also be provided. To ensure satisfactory operation of each generator, additional control equipment and measuring instruments, if needed, must also be provided.

(d) Each generator must have a nameplate attached to it indicating—

(1) Name of manufacturer, type of generator, and designation of frame;

(2) Output in kilowatts, or horsepower rating;

(3) Kind of rating (continuous, overload, or other);

(4) Amperes at rated load, voltage, and frequency;

(5) Number of phases, if applicable;

(6) Type of windings, if DC;

(7) When intended for connection in a normally grounded configuration, the grounding polarity; and

(8) For a generator derated to comply with paragraph (b)(2) of this section, the derated capacity.

(e) Each motor must have attached to it a nameplate containing the information required by Article 430 of NFPA 70.

§ 129.323 Multiple generators.

If an OSV uses two or more generators to supply electricity for the ship's service loads, to comply with §129.310(a) of this subpart, the following requirements must be met:

(a) Each generator must have an independent prime mover.

(b) The circuit breaker of a generator to be operated in parallel with another generator must comply with §§111.12-

11(f), 111.30-19(a), and 111.30-25(d) of this chapter.

(c) The circuit breaker of a generator not to be operated in parallel with another generator must be interlocked to prevent that generator from being connected to the switchboard simultaneously with another.

§ 129.326 Dual-voltage generators.

If a dual-voltage generator is installed on an OSV—

(a) The neutral of the dual-voltage system must be solidly grounded at the switchboard's neutral bus and be accessible for checking the insulation resistance of the generator; and

(b) Ground detection must be provided that—

(1) For an alternating-current system, complies with §111.05-27 of this chapter; and

(2) For a direct-current system, complies with §111.05-29 of this chapter.

§ 129.330 Distribution panels and switchboards.

(a) Each distribution panel or switchboard must be in a location as dry as practicable, accessible, adequately ventilated, and protected from falling debris and dripping or splashing water.

(b) Each distribution panel or switchboard must be totally enclosed and of the dead-front type.

(c) Each switchboard must have non-conductive handrails.

(d) Each switchboard or main distribution panel must be fitted with a dripshield, unless the switchboard or distribution panel is of a type mounted deck-to-overhead and is not subject to falling objects or liquids from above.

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

(f) Working space must be provided around each main distribution panel and switchboard of at least 610 millimeters (24 inches) in front of the switchboard and, of at least 460 millimeters (18 inches) from the nearest bulkhead, stiffener, or frame behind the switchboard. Rear access is prohibited when the working space behind the switchboard is less than 460 millimeters (18 inches).

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

(h) Each uninsulated current-carrying part must be mounted on non-combustible, nonabsorbent, high-dielectric insulating material.

(i) Equipment mounted on a hinged door of an enclosure must be constructed or shielded so that no person will come into accidental contact with energized parts of the door-mounted equipment when the door is open and the circuit energized.

(j) Bus capacity of switchboards and main distribution panels must be sized in accordance with §111.30-19(a) of this chapter. Panelboards must have current rating of not less than the feeder-circuit capacity.

§ 129.340 Cable and wiring.

(a) If individual wires, rather than cables, are used in systems operating at a potential of greater than 50 volts, the wire and associated conduit must be run in a protected enclosure. The protected enclosure must have drain holes to prevent the buildup of condensation.

(b) Each cable and wire must—

(1) Have stranded copper conductors with sufficient current-carrying capacity for the circuit in which it is used;

(2) Be installed so as to avoid or reduce interference with radio reception and compass indication;

(3) Be protected from the weather;

(4) Be supported so as to avoid chafing or other damage;

(5) Be installed without sharp bends;

(6) Be protected by metal coverings or other suitable means, if in areas subject to mechanical abuse;

(7) Be suitable for low temperature and high humidity, if installed in refrigerated compartments;

(8) Be located outside a tank, unless it supplies power to equipment in the tank; and

(9) Have sheathing or wire insulation compatible with the fluid in a tank, when installed to comply with paragraph (b)(8) of this section.

(c) Cable and wire in power and lighting circuits must be #14 AWG or larger. Cable and wire in control and indicator

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circuits must be #22 AWG or larger, or be ribbon cable or similar, smaller, conductor-size cable recommended by the equipment manufacturer for use in circuits for low-power instrumentation, monitoring, or control.

(d) Cable and wire for power and lighting circuits must—

(1) Comply with Section 310-13 of the NEC (NFPA 70), except that no asbestos-insulated cable or dry-location cable may be used;

(2) Be listed by Underwriters Laboratories, Inc. as UL Boat or UL Marine Shipboard cable; or

(3) Comply with §111.60-1 of this chapter for cable, and §111.60-11 of this chapter for wire.

(e) Cable and wire serving vital systems listed in §128.130(a) of this subchapter or serving emergency loads must be routed as far as practicable from areas at high risk for fire, such as galleys, laundries, and machinery spaces.

(f) Cable or wire serving duplicated equipment must be separated so that a casualty that affects one cable does not affect the other.

(g) Each connection to a conductor or a terminal part of a conductor must be made within an enclosure and—

(1) Have a pressure-type connector on each conductor;

(2) Have a solder lug on each conductor;

(3) Have a splice made with a pressure-type connector to a flexible lead or conductor; or

(4) Be splice-soldered, brazed, or welded to a flexible lead or conductor.

(h) A connector or lug of the set-screw type must not be used with a stranded conductor smaller than No. 14 AWG, unless there is a nonrotating follower that travels with the set screw and makes pressure contact with the conductor.

(i) Each pressure-type wire connector and lug must comply with UL 486A. No wire nuts may be used.

(j) Each terminal block must have terminal screws 6-32 or larger.

(k) Each wire connector used in conjunction with screw-type terminal blocks must be of the captive type such as the ring or the flanged-spade type.

(l) No cable may be spliced in—

(1) A hazardous location; or

(2) Another location, except—

(i) A cable installed in a subassembly may be spliced to a cable installed in another subassembly;

(ii) For a vessel receiving alterations, a cable may be spliced to extend a circuit;

(iii) A cable of large diameter or exceptional length may be spliced to facilitate its installation.

(iv) A cable may be spliced to replace a damaged section of itself if, before replacement of the damaged section, the insulation resistance of the remainder of the cable is measured, and the condition of the insulation is unimpaired.

(m) All material in a cable splice must be chemically compatible with other material in the splice and with the materials in the cable.

(n) Ampacities for conductors must comply with Section 310-15 of the NEC (NFPA 70), or with IEEE Standard 45, as appropriate.

(o) Each conductor must be sized so that the voltage drop at the load terminals does not exceed 10 percent.

(p) Each metallic covering of armored cable must—

(1) Be electrically continuous; and

(2) Be grounded at each end of the run to the—

(i) Hull (on a metallic vessel); or

(ii) Common ground plate (on a non-metallic vessel); and

(3) Have final sub-circuits grounded at the supply end only.

(q) Each portable or temporary electric cord or cable must be constructed and used in compliance with the requirements of §111.60-13 of this chapter for flexible electric cord or cable.

§ 129.350 Batteries—general.

(a) Wherever a battery is charged, there must be natural or induced ventilation to dissipate the gases generated.

(b) Each battery must be located as high above the bilge as practicable within the space the battery is located in and be secured to protect against shifting due to roll, pitch, and heave motions or vibration of the vessel, and free from exposure to splash or spray of water.

(c) Each battery must be accessible for maintenance and removal.

(d) Each connection to a battery terminal must be made with a permanent connector, rather than with spring clips or other temporary clamps.

(e) Each battery must be mounted in a tray lined with, or constructed of, lead or other material resistant to damage by the electrolyte.

(f) Each battery charger must have an ammeter connected in the charging circuit.

(g) Unless the battery is adjacent to its distribution panel or switchboard that distributes power to the lighting, motor, and appliance circuits, the battery leads must have fuses in series with and as close as practicable to the battery.

(h) Each battery used for starting an engine must be located as close as possible to the engine or engines served.

§ 129.353 Battery categories.

This section applies to batteries installed to meet the requirements of § 129.310(a) for secondary sources of power to vital loads.

(a) *Large.* A large battery installation is one connected to a battery charger having an output of more than 2 kW, computed from the highest possible charging current and rated voltage of the battery installed.

(b) *Small.* A small battery installation is one connected to a battery charger having an output of 2 kW or less, computed from the highest possible charging current and rated voltage of the battery installed.

§ 129.356 Battery installations.

(a) *Large.* Each large battery installation must be located in a locker, room, or enclosed box dedicated solely to the storage of batteries. Ventilation must be provided in accordance with § 111.15-10 of this chapter. Electrical equipment located within the battery enclosure must be approved by an independent laboratory for hazardous locations of Class I, Division 1, Group B, and must meet subpart 111.105 of this chapter.

(b) *Small.* Each small battery installation must be located in a well-ventilated space and protected from falling objects. No small battery installation may be in a closet, storeroom, or similar space.

§ 129.360 Semiconductor-rectifier systems.

(a) Each semiconductor-rectifier system must have an adequate heat-removal system to prevent overheating.

(b) If a semiconductor-rectifier system is used in a propulsion system or in another vital system, it must—

(1) Have a current-limiting circuit;

(2) Have external overcurrent protection; and

(3) Comply with Sections 4/5.84.2 and 4/5.84.4 of the "Rules for Building and Classing Steel Vessels" of the American Bureau of Shipping.

§ 129.370 Equipment grounding.

(a) On a metallic vessel each metallic enclosure and frame of electrical equipment must be permanently grounded to the hull. On a nonmetallic vessel each enclosure and frame of electrical equipment must be bonded to each other and to a common ground by a conductor not normally carrying current.

(b) Each metallic case of instruments must be grounded. So must each secondary winding of instrument transformers.

(c) Each equipment grounding conductor must be sized to comply with section 250-95 of NEC (NFPA 70).

(d) Each nonmetallic mast and topmast must have a lightning-ground conductor.

§ 129.375 System grounding.

(a) If a grounded distribution system is provided, there must be only one connection to ground, regardless of the number of power sources. This connection must be at the main switchboard.

(b) On each metallic vessel, a grounded distribution system must be grounded to the hull. On each nonmetallic vessel, the neutral of a grounded system must be connected to a common ground plate, except that no aluminum grounding conductors may be used.

(c) On each nonmetallic vessel with a grounded distribution system, the common ground plate must have—

(1) Only one connection to the main switchboard; and

(2) The connection to itself readily accessible for checking.

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(d) On each nonmetallic vessel with a ground plate provided for radio equipment, the plate must be connected to the common ground plate.

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

(1) Wrapping of the cable with green braid or green insulation.

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

(3) Marking of the exposed insulation of the grounding-conductor with green tape or green adhesive labels.

(f) No vessel's hull may carry current as a conductor except for—

(1) An impressed-current cathodic-protection system; or

(2) A battery system to start an engine.

(g) No cable armor may 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.

§ 129.380 Overcurrent protection.

(a) Overcurrent protection must be provided for each ungrounded conductor, to open the electric circuit if the current reaches a value that causes an excessive or dangerous temperature in the conductor or its insulation.

(b) Each conductor of a control, interlock, or indicator circuit, such as a conductor for an instrument, pilot light, ground-detector light, or potential transformer, must be protected by an overcurrent device.

(c) Each generator must be protected by an overcurrent device set at a value not exceeding 115 percent of the generator's full-load rating.

(d) Circuits of control systems for steering gear must be protected against short circuit.

(e) Each feeder circuit for steering gear must be protected by a circuit breaker that complies with §§58.25-55(a) and (b) of this chapter.

(f) Each branch circuit for lighting must be protected against overcurrent by either fuses or circuit breakers. Nei-

ther the fuses nor the circuit breakers may be rated at more than 30 amperes.

(g) Each conductor must be protected in accordance with its current-carrying capacity. If the allowable current-carrying capacity does not correspond to a standard size of device, the next larger overcurrent device may be used, provided it is less than 150 percent of the conductor's current-carrying capacity.

(h) An overcurrent device must be installed to protect each motor conductor and control apparatus against overcurrent due to short circuit or ground fault. Each overcurrent device must be capable of carrying the starting current of the motor.

(i) An emergency switch must be provided in each normally ungrounded main supply conductor from a battery. The switch must be accessible from the battery and located as close as practicable to it.

(j) No grounded conductor of a circuit may be disconnected by a switch or circuit breaker unless the ungrounded conductors are all simultaneously disconnected.

(k) A means of disconnect must be provided on the supply side of and adjacent to each fuse, to de-energize the fuse for inspection and maintenance.

(l) A way for locking the means of disconnect open must be provided unless the means of disconnect for a fused circuit is within sight of the equipment that the circuit supplies.

(m) Each fuse must be of the cartridge type and be listed by Underwriters Laboratories (UL) or another independent laboratory recognized by the Commandant.

(n) Each circuit breaker must meet UL 489 and be of the manually-reset type designed for—

(1) Inverse delay;

(2) Instantaneous short-circuit protection; and

(3) Switching duty if the breaker is used as a switch.

(o) Each circuit breaker must indicate whether it is open or closed.

§ 129.390 Shore power.

Each vessel that has an electrical system operating at more than 50 volts and has provisions for receiving shore power must meet the requirements of this section:

(a) A shore-power-connection box or receptacle must be permanently installed at a convenient location.

(b) A cable connecting the shore-power-connection box or receptacle to the switchboard or main distribution panel must be permanently installed.

(c) A circuit breaker must be provided at the switchboard or main distribution panel for the shore-power connection.

(d) The circuit breaker, required by paragraph (c) of this section, must be interlocked with the feeder circuit breakers for the vessel's power sources to preclude the vessel's power sources and shore power from energizing the vessel's switchboard simultaneously, except in cases where system devices permit safe momentary paralleling of OSV power with shore power.

§ 129.395 Radio installations.

A separate circuit, with overcurrent protection at the switchboard, must be provided for at least one radio installation. Additional radios, if installed, may be powered from a local lighting power source, such as the pilothouse lighting panel, provided each radio power source has a separate overcurrent protection device.

Subpart D—Lighting Systems

§ 129.410 Lighting fixtures.

(a) Each globe, lens, or diffuser of a lighting fixture must have a high-strength guard or be made of high-strength material, except in accommodations, the pilothouse, the galley, or similar locations where the fixture is not subject to damage.

(b) No lighting fixture may be used as a connection box for a circuit other than the branch circuit supplying the fixture.

(c) Each lighting fixture must be installed as follows:

(1) Each lighting fixture and lampholder must be fixed. No fixture may be supported by the screw shell of a lampholder.

(2) Each pendant-type lighting fixture must be suspended by and supplied through a threaded rigid-conduit stem.

(3) Each tablelamp, desk lamp, floor lamp, or similar equipment must be so secured in place that it cannot be

displaced by the roll, pitch, or heave or by the vibration of the vessel.

(d) Each lighting fixture in an electrical system operating at more than 50 volts must comply with UL 595, "Marine Type Electric Lighting Fixtures." A lighting fixture in an accommodation space, radio room, galley, or similar interior space may comply with UL 57, "Electric Lighting Fixtures," UL 1570, "Fluorescent Lighting Fixtures," UL 1571, "Incandescent Lighting Fixtures," UL 1572, "High Intensity Discharge Lighting Fixtures," UL 1573, "Stage and Studio Lighting Units," or UL 1574, "Track Lighting Systems," as long as the general marine requirements of UL 595 are satisfied.

§ 129.420 Branch circuits for lighting on OSVs of 100 or more gross tons.

On each vessel of 100 or more gross tons, each branch circuit for lighting must comply with §111.75-5 of this chapter, except that—

(a) Appliance loads, electric-heater loads, and isolated small-motor loads may be connected to a lighting-distribution panelboard; and

(b) Branch circuits, other than for lighting, connected to the lighting-distribution panelboard permitted by paragraph (a) of this section may have fuses or circuit breakers rated at more than 30 amperes.

§ 129.430 Navigational lighting.

(a) Each vessel of less than 100 gross tons and less than 19.8 meters (65 feet) in length must have navigational lighting in compliance with the applicable navigation rules.

(b) Each vessel of 100 or more gross tons, or 19.8 meters (65 feet) or more in length, must have navigational lighting in compliance with the applicable navigation rules and with §111.75-17(d) of this chapter.

§ 129.440 Emergency lighting.

(a) A vessel of less than 100 gross tons must have adequate emergency lighting fitted along the line of escape to the main deck from accommodations and working (machinery) spaces below the main deck.

(b) The emergency lighting required by paragraph (a) of this section must

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automatically actuate upon failure of the main lighting. Unless a vessel is equipped with a single source of power for emergency lighting, it must have individual battery-powered lighting that is—

- (1) Automatically actuated upon loss of normal power;
- (2) Not readily portable;
- (3) Connected to an automatic battery-charger; and
- (4) Of enough capacity for 6 hours of continuous operation.

§ 129.450 Portable lighting.

Each vessel must be equipped with at least two operable, portable, battery-powered lights. One of these lights must be located in the pilothouse, another at the access to the engine room.

Subpart E—Miscellaneous Electrical Systems

§ 129.510 Lifeboat winches.

Each lifeboat winch operated by electric power must comply with subparts 111.95 and be approved under approval series in subparts 160.015 or 160.115 of this chapter.

§ 129.520 Hazardous areas.

(a) No OSV that carries flammable or combustible liquid with a flashpoint of below 140 °F (60 °C), or carries hazardous cargoes on deck or in integral tanks, or is involved in servicing wells, may have electrical equipment installed in pump rooms, in hose-storage spaces, or within 3 meters (10 feet) of a source of vapor on a weather deck unless the equipment is explosion-proof or intrinsically safe under §111.105-9 or 111.105-11 of this chapter.

(b) No electrical equipment may be installed in any locker used to store paint, oil, turpentine, or other flammable liquid unless the equipment is explosion-proof or intrinsically safe under §111.105-9 or §111.105-11 of this chapter.

(c) Equipment that is explosion-proof and intrinsically safe must comply with subpart 111.105 of this chapter.

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§ 129.530 General alarm.

Each vessel must be fitted with a general alarm that complies with subpart 113.25 of this chapter.

§ 129.540 Remote stopping-systems on OSVs of 100 or more gross tons.

(a) Except as provided by paragraph (b) of this section, each vessel must be fitted with remote stopping-systems that comply with subpart 111.103 of this chapter.

(b) The following remote stopping-systems may substitute for remote stopping-systems that must comply with subpart 111.103 of this chapter:

(1) For each propulsion unit, in the pilothouse.

(2) For each discharge pump for bilge slop or dirty oil, at the deck discharge.

(3) For each powered ventilation system, outside the space ventilated.

(4) For each fuel-oil pump, outside the space containing the pump.

(5) For each cargo-transfer pump for combustible and flammable liquid, at each transfer-control station.

(c) Remote stopping-systems required by this section may be combined.

§ 129.550 Power for cooking and heating.

(a) Equipment for cooking and heating must be suitable for marine use. Equipment designed and installed to comply with ABYC Standards A-3 and A-7 or Chapter 6 of NFPA 302 meets this requirement.

(b) The use of gasoline for cooking, heating, or lighting is prohibited.

(c) The use of liquefied petroleum gas for cooking, heating, or other purposes must comply with subpart 58.16 of this chapter.

(d) Each electric space-heater must be provided with a thermal cut-out to prevent overheating.

(e) Each element of an electric space-heater must be enclosed, and the case or jacket of the element made of a corrosion-resistant material.

(f) Each electrical connection for a cooking appliance must be drip-proof.

§ 129.560 Engine-order telegraphs.

No OSV need carry an engine-order telegraph, provided the vessel meets

the requirements of § 113.35-3(d) of this chapter.

PART 130—VESSEL CONTROL, AND MISCELLANEOUS EQUIPMENT AND SYSTEMS

Subpart A—Vessel Control

Sec.

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SOURCE: CGD 82-004 and CGD 86-074, 62 FR 49337, Sept. 19, 1997, unless otherwise noted.

Subpart A—Vessel Control

§ 130.110 Internal communications on OSVs of less than 100 gross tons.

Each vessel of less than 100 gross tons equipped with an independent auxiliary means of steering, as required by § 130.130(b) of this subpart, must have a fixed means of communication between

the pilothouse and the place where the auxiliary means of steering is controlled.

§ 130.120 Propulsion control.

- (a) Each vessel must have—
 - (1) A propulsion-control system operable from the pilothouse; and
 - (2) A means at each propulsion engine of readily disabling the propulsion-control system to permit local operation.
- (b) Each propulsion-control system operable from the pilothouse must enable—
 - (1) Control of the speed of each propulsion engine;
 - (2) Control of the direction of propeller-shaft rotation;
 - (3) Control of propeller pitch, if a controllable-pitch propeller is fitted; and
 - (4) Shutdown of each propulsion engine.
- (c) The propulsion-control system operable from the pilothouse may constitute the remote stopping-system required by § 129.540 of this subchapter.
- (d) Each propulsion-control system, including one operable from the pilothouse, must be designed so that no one complete or partial failure of an easily replaceable component of the system allows the propulsion engine to overspeed or the pitch of the propeller to increase.

§ 130.130 Steering on OSVs of less than 100 gross tons.

- (a) Each OSV of less than 100 gross tons must have a steering system that complies with—
 - (1) Section 130.140 of this subpart; or
 - (2) This section.
- (b) Except as provided by paragraph (i) of this section, each vessel must have a main and an independent auxiliary means of steering.
- (c) The main means of steering (main steering gear) must be—
 - (1) Of adequate strength for, and capable of, steering the OSV at each service speed;
 - (2) Designed to operate at maximum astern speed without being damaged; and
 - (3) Capable of moving the rudder from 35 degrees on one side to 30 degrees on the other side in no more than