

(2) Provisions must be made to prevent or mitigate the effect of galvanic corrosion due to the relative solution potentials of copper, aluminum, and alloys of copper and aluminum, which are used in conjunction with each other, steel, or other metals and their alloys;

(3) A suitable thread compound must be used in making up threaded joints in aluminum pipe to prevent seizing. Pipe in the annealed temper must not be threaded;

(4) The use of aluminum alloys with a copper content exceeding 0.6 percent is prohibited; and

(5) The use of cast aluminum alloys in hydraulic fluid power systems must be in accordance with the requirements of §58.30-15(f) in subchapter F of this chapter.

## PART 183—ELECTRICAL INSTALLATION

### Subpart A—General Provisions

Sec.

- 183.100 Intent.
- 183.115 Applicability to existing vessels.
- 183.130 Alternative standards.

### Subpart B—General Requirements

- 183.200 General design, installation, and maintenance requirements.
- 183.210 Protection from wet and corrosive environments.
- 183.220 General safety provisions.

### Subpart C—Power Sources and Distribution Systems

- 183.310 Power sources.
- 183.320 Generators and motors.
- 183.322 Multiple generators.
- 183.324 Dual voltage generators.
- 183.330 Distribution panels and switchboards.
- 183.340 Cable and wiring requirements.
- 183.350 Batteries—general.
- 183.352 Battery categories.
- 183.354 Battery installations.
- 183.360 Semiconductor rectifier systems.
- 183.370 General grounding requirements.
- 183.372 Equipment and conductor grounding.
- 183.376 Grounded distribution systems (neutral grounded).
- 183.378 Ungrounded systems.
- 183.380 Overcurrent protection.
- 183.390 Shore power.
- 183.392 Radiotelephone installations.

### Subpart D—Lighting Systems

- 183.410 Lighting fixtures.
- 183.420 Navigation lights.
- 183.430 Portable lights.
- 183.432 Emergency lighting.

### Subpart E—Miscellaneous Systems and Requirements

- 183.520 Lifeboat winches.
- 183.530 Hazardous areas.
- 183.540 Elevators.
- 183.550 General alarm systems.

AUTHORITY: 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

SOURCE: CGD 85-080, 61 FR 997, Jan. 10, 1996, unless otherwise noted.

### Subpart A—General Provisions

#### § 183.100 Intent.

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

#### § 183.115 Applicability to existing vessels.

(a) Except as otherwise required by paragraphs (b) and (c) of this section, an existing vessel must comply with the regulations on electrical installations, equipment, and material that were applicable to the vessel on March 10, 1996, or, as an alternative, the vessel may comply with the regulations in this part.

(b) An existing vessel must comply with the requirements of §§183.420 and 183.430.

(c) New installations of electrical equipment and material, and the repair or replacement of wire and cable, on an existing vessel, which are completed to the satisfaction of the cognizant Officer in Charge, Marine Inspection (OCMI) on or after March 11, 1996, must comply with this part. Replacement of existing equipment, not including wire or cable, installed on the vessel prior to March 11, 1996 need not comply with the regulations in this part.

#### § 183.130 Alternative standards.

(a) A vessel, other than a high speed craft, of not more than 19.8 meters (65

feet) in length carrying not more than 12 passengers, may comply with the following requirements instead of complying with the requirements of this part in their entirety:

- (1) Section 183.420; and
  - (2) The following American Boat and Yacht Council (ABYC) Projects where applicable:
    - (i) E-8, "Alternating Current (AC) Electrical Systems on Boats;"
    - (ii) E-9, "Direct Current (DC) Electrical Systems on Boats;" and
    - (iii) A-16, "Electrical Navigation Lights."
- (b) A vessel with an electrical installation operating at less than 50 volts may meet the requirements in 33 CFR 183.430 instead of those in §183.340 of this part.

[CGD 85-080, 61 FR 997, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997]

## Subpart B—General Requirements

### § 183.200 General design, installation, and maintenance requirements.

Electrical equipment on a vessel must be installed and maintained to:

- (a) Provide services necessary for safety under normal and emergency conditions;
- (b) Protect passengers, crew, other persons, and the vessel from electrical hazards, including fire, caused by or originating in electrical equipment, and electrical shock;
- (c) Minimize accidental personnel contact with energized parts; and
- (d) Prevent electrical ignition of flammable vapors.

### § 183.210 Protection from wet and corrosive environments.

- (a) Electrical equipment used in the following locations must be dripproof:
  - (1) A machinery space;
  - (2) A location normally exposed to splashing, water washdown, or other wet conditions within a galley, a laundry, or a public washroom or toilet room that has a bath or shower; or
  - (3) Another space with a similar moisture level.
- (b) Electrical equipment exposed to the weather must be watertight.
- (c) Electrical equipment exposed to corrosive environments must be of

suitable construction and corrosion-resistant.

### § 183.220 General safety provisions.

- (a) Electrical equipment and installations must be suitable for the roll, pitch, and vibration of the vessel underway.
- (b) All equipment, including switches, fuses, lampholders, etc., must be suitable for the voltage and current utilized.
- (c) Receptacle outlets of the type providing a grounded pole or a specific direct current polarity must be of a configuration that will not permit improper connection.
- (d) All 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

### § 183.310 Power sources.

- (a)(1) Each vessel that relies on electricity to power the following loads must be arranged so that the loads can be energized from two sources of electricity:
  - (i) The vital systems listed in §182.710 of this chapter;
  - (ii) Interior lighting except for decorative lights;
  - (iii) Communication systems including a public address system required under §184.610 of this chapter; and
  - (iv) Navigation equipment and lights.
- (2) A vessel with batteries of adequate capacity to supply the loads specified in paragraph (a)(1) of this section for three hours, and a generator or alternator driven by a propulsion engine, complies with the requirement in paragraph (a)(1) of this section.
- (b) Where a ship service generator driven by a propulsion engine is used as a source of electrical power, a vessel speed change, throttle movement or change in direction of the propeller shaft rotation must not interrupt power to any of the loads specified in paragraph (a)(1) of this section.