

(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 circuits must be #22 AWG or larger, or be ribbon cable or similar, smaller,

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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.

(1) 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