(d) For each three-wire generator, each switchboard must have the following:
(1) An ammeter for:
(i) The positive lead; and
(ii) The negative lead.
(2) A center zero type ammeter for the neutral ground connection.
(3) A voltmeter with a selector switch that connects the voltmeter to show generator and bus voltage:
(i) Positive to negative;
(ii) Positive to neutral; and
(iii) Neutral to negative.
(e) Each switchboard must have ground detection that meets Subpart 111.05 for the:
(1) Main power system;
(2) Main lighting system; and
(3) Emergency lighting system.
(f) For each shore power connection, each switchboard must have:
(1) A circuit breaker or fused switch; and
(2) A pilot light connected to the shore side.
(g) One of the voltmeters under paragraph (c)(2) or (d)(3) of this section must be connected to show:
(1) For each two-wire system, shore connection voltage; and
(2) For each three-wire system, shore connection voltage:
(i) Positive to negative;
(ii) Positive to neutral; and
(iii) Neutral to negative.

§ 111.30–29 Emergency switchboards.

(a) Each emergency generator must have an emergency switchboard.
(b) There must be a test switch at the emergency switchboard to simulate a failure of the normal power source and cause the emergency loads to be supplied from the emergency power source.
(c) The emergency switchboard must be as near as practicable to the emergency power source but not in the same space as a battery emergency power source.
(d) Each alternating-current emergency switchboard must have the equipment required by paragraphs (c) through (e) of this section.
(e) For each connected emergency generator, each emergency switchboard must have:
(1) A circuit breaker that meets § 111.12–11;
(2) A disconnect switch or link for each emergency generator conductor, except for a switchboard with a draw out or plug-in type generator circuit breaker that disconnects:
(i) Each generator conductor; and
(ii) If there is a switch in the generator neutral, each ungrounded conductor; and
(3) A pilot lamp connected between the generator and circuit breaker.
(f) For each emergency generator that is not excited from a variable voltage or rotary amplifier exciter that is controlled by a voltage regulator unit acting on the exciter field, each emergency switchboard must have:
(1) A generator field rheostat;
(2) A double pole field switch;
(3) Discharge clips; and
(4) A discharge resistor.
(g) Each emergency switchboard must have the following:
(1) An ammeter with a selector switch that connects the ammeter to show the current for each phase.
(2) A voltmeter with a selector switch that connects the voltmeter to show:
(i) Generator voltage of each phase; and
(ii) Bus voltage of one phase.
(3) Ground detection that meets subpart 111.05 for the emergency lighting system.
(4) A frequency meter.
(5) An exciter field rheostat.
(6) A voltage regulator and a voltage regulator functional cut-out switch.
(h) Each direct-current emergency switchboard must have the:
(1) Equipment under § 111.30–27 (b) through (d); and
(2) Ground detection under subpart 111.05 for the emergency lighting system.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28279, June 4, 1996]

Subpart 111.33—Power Semiconductor Rectifier Systems

§ 111.33–1 General.

This subpart is applicable to all power semiconductor rectifier systems.