Subpart 111.52—Calculation of Short-Circuit Currents

§ 111.52–1 General.

The available short-circuit current must be computed—

(a) From the aggregate contribution of all generators that can simultaneously operate in parallel;

(b) From the largest probable motor load; and

(c) With a three phase fault on the load terminals of the protective device.

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

§ 111.52–3 Systems below 1500 kilowatts.

The following short-circuit assumptions must be made for a system with an aggregate generating capacity below 1500 kilowatts, unless detailed computations in accordance with § 111.52–5 are submitted:

(a) The maximum short-circuit current of a direct current system must be assumed to be 10 times the aggregate normal rated generator currents plus six times the aggregate normal rated currents of all motors that may be in operation.

(b) The maximum asymmetrical short-circuit current for an alternating current system must be assumed to be 10 times the aggregate normal rated generator currents plus four times the aggregate normal rated currents of all motors that may be in operation.

(c) The average asymmetrical short-circuit current for an alternating-current system must be assumed to be 8½ times the aggregate normal rated generator currents plus 3½ times the aggregate normal rated currents of all motors that may be in operation.

§ 111.52–5 Systems 1500 kilowatts or above.

Short-circuit calculations must be submitted for systems with an aggregate generating capacity of 1500 kilowatts or more by utilizing one of the following methods:

(a) Exact calculations using actual impedance and reactance values of system components.

(b) Estimated calculations using NAVSEA DDS 300–2 (incorporated by reference, see 46 CFR 110.10–1).

(c) Estimated calculations using IEC 61363–1 (incorporated by reference; see 46 CFR 110.10–1).

(d) The estimated calculations using a commercially established analysis procedure for utility or industrial applications.

[CGD 94–108, 61 FR 28279, June 4, 1996, as amended by USCG–2003–16630, 73 FR 65197, Oct. 31, 2008]

Subpart 111.53—Fuses

§ 111.53–1 General.

(a) Each fuse must—

(1) Meet the general provisions of Article 240 of NFPA NEC 2002 or IEC 92–202 (both incorporated by reference; see 46 CFR 110.10–1) as appropriate.

(2) Have an interrupting rating sufficient to interrupt the asymmetrical RMS short-circuit current at the point of application; and

(3) Be listed by an independent laboratory.

(b) Renewable link cartridge-type fuses must not be used.

(c) Each fuse installation must provide for ready access to test the condition of the fuse.

[CGD 94–108, 61 FR 28279, June 4, 1996, as amended by61 FR 33045, June 26, 1996; USCG–2003–16630, 73 FR 65197, Oct. 31, 2008]

Subpart 111.54—Circuit Breakers

§ 111.54–1 Circuit breakers.

(a) Each Circuit breaker must—

(1) Meet the general provision of Article 240 of NFPA NEC 2002 or IEC 92–202 (both incorporated by reference; see 46 CFR 110.10–1) as appropriate;

(2) Meet subpart 111.55 of this part; and

(3) Have an interrupting rating sufficient to interrupt the maximum asymmetrical short-circuit current available at the point of application.

(b) No molded-case circuitbreaker may be used in any circuit having a nominal voltage of more than 600 volts (1,000 volts for a circuit containing a circuitbreaker manufactured to the standards of the IEC). Each molded-case circuitbreaker must meet section