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SUBCHAPTER J—ELECTRICAL ENGINEERING

PART 110—GENERAL PROVISIONS

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AUTHORITY: 43 U.S.C. 1333; 46 U.S.C. 3306, 3307, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; DHS Delegation 00170.1, Revision No. 01.2; §110.01–2 also issued under 44 U.S.C. 3507. Sections 110.15–1 and 110.25–1 also issued under sec. 617, Pub. L. 111–281, 124 Stat. 2905.

SOURCE: CGD 74–125A, 47 FR 15232, Apr. 8, 1982, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 110 appear by USCG–2025–0186, 90 FR 12238, Mar. 17, 2025.

Subpart 110.01—Applicability

§110.01–1 General.

(a) This subchapter applies to all electrical installations on vessels subject to subchapters D, H, I, I-A, K, L, O, Q, R, T, U, and W of this chapter whenever those subchapters require an electrical installation to be in accordance with this subchapter.

(b) This subchapter applies only to electrical installations contracted for after April 17, 2023.

(c) Installations and equipment accepted by the Coast Guard as meeting the applicable requirements in this subchapter in effect on the date the installation was contracted for and which are maintained in good and serviceable condition to the satisfaction of the Officer in Charge, Marine Inspection, may be continued in use until replacement is ordered by the Officer in Charge, Marine Inspection, or as specified in the regulations.

(d) [Reserved]

(e) Electrical systems internal to a pressure vessel for human occupancy (PVHO) need not meet the requirements of this subchapter, but must meet the requirements of Subpart B (Commercial Diving Operations) of part 197 of this chapter.

[CGD 74–125A, 47 FR 15232, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28271, June 4, 1996; USCG–2020–0075, 88 FR 16354, Mar. 16, 2023]

§110.01–2 OMB control numbers assigned pursuant to the Paperwork Reduction Act.

(a) *Purpose.* This section collects and displays the control numbers assigned to information collection and recordkeeping requirements in this subchapter by the Office of Management and Budget (OMB) pursuant to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 *et seq.*). The Coast Guard intends that this section comply with the requirements of 44 U.S.C. 3507(f) which requires that agencies display a current control number assigned by the Director of the OMB for each approved agency information collection requirement.

(b) *Display.*

46 CFR part or section where identified or described	Current OMB control No.
Subpart 110.25	1625–0031

[49 FR 38121, Sept. 27, 1984, as amended by USCG–2004–18884, 69 FR 58348, Sept. 30, 2004]

§ 110.01–3 Repairs and alterations.

(a) Repairs and replacements in kind must comply with either the regulations in this subchapter or those in effect when the vessel was built.

(b) Alterations and modifications, such as re-engining, re-powering, upgrading of the main propulsion control system, or replacing extensive amounts of cabling, must comply with the regulations in this subchapter.

(c) Conversions specified in 46 U.S.C. 2101(14a), such as the addition of a midbody or a change in the service of the vessel, are handled on a case-by-case basis by the Commanding Officer, Marine Safety Center.

[CGD 94–108, 61 FR 28271, June 4, 1996, as amended at 62 FR 23906, May 1, 1997]

§ 110.01–4 Right of appeal.

Any person directly affected by a decision or action taken under this subchapter, by or on behalf of the Coast Guard, may appeal therefrom in accordance with subpart 1.03 of this chapter.

[CGD 88–033, 54 FR 50380, Dec. 6, 1989]

Subpart 110.10—Reference Specifications, Standards, and Codes

§ 110.10–1 Incorporation by reference.

Certain material is incorporated by reference into this subchapter with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. All approved incorporation by reference (IBR) material is available for inspection at the U.S. Coast Guard and at the National Archives and Records Administration (NARA). Contact U.S. Coast Guard at: U.S. Coast Guard, Office of Design and Engineering Standards (CG–ENG), 2703 Martin Luther King Jr Ave. SE, Stop 7418, Washington, DC 20593–7418, 202–372–1384, *www.dco.uscg.mil/CG–ENG/*. For information on the availability of this material at NARA, email: *fr.inspection@nara.gov;* website: *www.archives.gov/federal-register/cfr/ibr-locations.html*. The material may be obtained from the following sources:

(a) *American Bureau of Shipping (ABS)*, 1701 City Plaza Drive, Spring, TX 77389; 281–877–5800; *CSC@eagle.org; ww2.eagle.org*.

(1) Rules for Building and Classing Marine Vessels, January 2020 (''ABS Marine Vessel Rules''); IBR approved for §§ 110.15–1(b); 111.01–9(b); 111.12–3; 111.12–5; 111.12–7(a) and (b); 111.33–11; 111.35–1; 111.70–1(a); 111.105–31(o); 111.105–39 introductory text and (a); 111.105–40(a) and (c); 112.05–7(c);113.05–7(a); including:

(i) Part 1: Rules for Conditions of Classification;

(ii) Part 2: Rules for Materials and Welding;

(iii) Part 3: Rules for Building and Classing Marine Vessels Hull—Hull Construction and Equipment;

(iv) Part 4: Rules for Building and Classing Marine Vessels Vessel—Vessel Systems and Machinery;

(v) Part 5A & 5B: Rules for Building and Classing Marine Vessels—Specific Vessel Types; Common Structural Rules for Bulk Carriers and Oil Tankers;

(vi) Part 5C: Rules for Building and Classing Marine Vessels—Specific Vessel Types (Chapters 1–6 and 7–18);

(vii) Part 5C: Rules for Building and Classing Marine Vessels—Specific Vessel Types (Chapters 7–18);

(viii) Part 5D: Rules for Building and Classing Marine Vessels—Offshore Support Vessels for Specialized Services;

(ix) Part 6: Rules for Building and Classing Marine Vessels—Specialized Items and Systems; and

(x) Part 7: Rules for Survey after Construction.

(2) Rules for Building and Classing Mobile Offshore Units, Part 4 Machinery and Systems, January 2020 (''ABS MOU Rules''); IBR approved for §§ 111.12–1(a); 111.12–3; 111.12–5; 111.12–7(c); 111.33–11; 111.35–1; 111.70–1(a).

(b) *American National Standards Institute (ANSI)*, 25 West 43rd Street, New York, NY 10036; 212–642–4900; *info@ansi.org; www.ansi.org*.

(1) ANSI/ISA–RP12.06.01–2003, Recommended Practice for Wiring Methods for Hazardous (Classified) Locations Instrumentation Part 1: Intrinsic Safety, approved April 16, 2003 (''ANSI RP12.06.01''); IBR approved for § 111.105–11(b).

(2) ANSI/ISA 12.12.01–2015, Nonincendive Electrical Equipment for

Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations, approved August 21, 2015 (''ANSI/ISA 12.12.01''); IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(c) *American Petroleum Institute (API),* 200 Massachusetts Avenue NW, Suite 1100. Washington, DC 20001–5571; 202–682–8000; *APIPubs@api.org*; *www.api.org*.

(1) API Recommended Practice 14F, Recommended Practice for Design, Installation, and Maintenance of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class I, Division 1 and Division 2 Locations, Sixth Edition, October 2018 (''API RP 14F''); IBR approved for § 111.105–17(b).

(2) API Recommended Practice 14FZ, Recommended Practice for Design, Installation, and Maintenance of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class I, Zone 0, Zone 1, and Zone 2 Locations, Second Edition, May 2013, (''API RP 14FZ''); IBR approved for § 111.105–17(b).

(3) API Recommended Practice 500, Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Division 1 and Division 2, Third Edition, December 2012 with errata January 2014 (''API RP 500''); IBR approved for §§ 111.106–7(a) and 111.106–13(b).

(4) API Recommended Practice 505, Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Zone 0, Zone 1, and Zone 2, Second Edition, August 2018 (''API RP 505''); IBR approved for §§ 111.106–7(a); 111.106–13(b).

(d) *American Society of Mechanical Engineers* (*ASME),* Two Park Avenue, New York, NY 10016–5990; 800–843–2763; *CustomerCare@asme.org; www.asme.org*.

(1) ASME A17.1–2016/CSA B44–16, Safety Code for Elevators and Escalators: Includes Requirements for Elevators, Escalators, Dumbwaiters, Moving Walks, Material Lifts, and Dumbwaiters with Automatic Transfer Devices, reissued January 16, 2017 with errata (''ASME A17.1''); IBR approved for § 111.91–1.

(2) [Reserved]

(e) *ASTM International (ASTM),* 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959; 610–832–9500; *service@astm.org; www.astm.org*.

(1) ASTM B117–19, Standard Practice for Operating Salt Spray (Fog) Apparatus, approved November 1, 2019 (''ASTM B117''); IBR approved for § 110.15–1(b).

(2) ASTM F2876–10 (Reapproved 2015), Standard Practice for Thermal Rating and Installation of Internal Combustion Engine Packages for use in Hazardous Locations in Marine Applications, Reapproved May 1, 2015 (''ASTM F2876–10''); IBR approved for §§ 111.105–28; 111.106–3(h); 111.108–3(g).

(f) *CSA Group,* 178 Rexdale Blvd., Toronto, ON, Canada M9W 1R3; 800–463–6727; *client.services@csagroup.org; www.csagroup.org*.

(1) CSA C22.2 No. 30–M1986 (Reaffirmed 2016), Explosion-proof enclosures for use in class I hazardous locations, Reaffirmed 2016 (''CSA C22.2 No. 30–M1986''), IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(2) CSA C22.2 No. 213–16, Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (classified) locations, May 2016 (''CSA C22.2 No. 213–16''); IBR approved for §§ 111.105–3(b); 111.106–3(b) and 111.108–3(b).

(3) CSA–C22.2 No. 0–10 (Reaffirmed 2015), General requirements—Canadian Electrical Code, Part II, including Update No. 2, dated November 2014, Reaffirmed 2015 (''CSA C22.2 No. 0–10''); IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(4) CAN/CSA–C22.2 No. 157–92 (Reaffirmed 2016)—Intrinsically safe and non-incendive equipment for use in hazardous locations, including Update No. 2, dated June 2003, Reaffirmed 2016 (''CSA C22.2 No. 157–92''); IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(g) *DLA Document Services,* Building 4/D, 700 Robbins Avenue, Philadelphia, PA 19111, 215–697–6396; *dlacontactcenter@dla.mil*; *https://quicksearch.dla.mil/qsSearch.aspx*.

(1) MIL–DTL–76E, Military Specification Wire and Cable, Hookup, Electrical, Insulated, General Specification

for, Nov. 3, 2016 (''MIL–DTL–76E''); IBR approved for §111.60–11(c).

(2) MIL–DTL–24640C—Detail Specification Cables, Lightweight, Low Smoke, Electric, for Shipboard Use, General Specification for, (''MIL–DTL–24640C''), including:

(i) MIL–DTL–24640C, November 8, 2011; IBR approved for §§111.60–1(a); 111.106–5(a); and

(ii) MIL–DTL–24640C Supplement 1, November 8, 2011; IBR approved for §§111.60–1(a); 111.106–5(a).

(3) MIL–DTL–24643C, Detail Specification Cables, Electric, Low Smoke Halogen-Free, for Shipboard Use, General Specification for (''MIL–DTL–24643C''), including:

(i) MIL–DTL–24643C, October 1, 2009; IBR approved for §§111.60–1(a); 111.106–5(a); and

(ii) MIL–DTL–24643C with Supplement 1A, 13 December 2011; IBR approved for §§111.60–1(a); 111.106–5(a).

(h) *European Committee for Standardization,* CEN–CENELEC Management Centre, rue de la Sence 23, B–1040 Brussels, Belgium; + 32 2 550 08 1; *info@cencenelec.eu; www.cen.eu.*

(1) EN 14744, Inland navigation vessels and sea-going vessels—Navigation light, English version, August 2005; IBR approved for §111.75–17(d).

(2) [Reserved]

(i) *FM Approvals,* P.O. Box 9102, Norwood, MA 02062, 781–762–4300; *https://www.fmglobal.com/report-contact-page/general-contact-form*; *https://www.fmapprovals.com.*

(1) Class Number 3600, Approval Standard for Electrical Equipment for Use in Hazardous (Classified) Locations—General Requirements, January 2018 (''FM Approvals Class Number 3600''); IBR approved for §§111.105–3(b); 111.106–3(b); 111.108–3(b).

(2) Class Number 3610, Approval Standard for Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations, January 2018 (''FM Approvals Class Number 3610''); IBR approved for §§111.105–3(b); 111.106–3(b); 111.108–3(b).

(3) Class Number 3611, Approval Standard for Nonincendive Electrical Equipment for Use in Class I and II, Division 2, and Class III, Divisions 1 and 2, Hazardous (Classified) Locations, January 2018 (''FM Approvals Class Number 3611''), IBR approved for §§111.105–3(b); 111.106–3(b); 111.108–3(b).

(4) Class Number 3615, Approval Standard for Explosion-proof Electrical Equipment General Requirements, January 2018 (''FM Approvals Class Number 3615''); IBR approved for §§111.105–3(b); 111.106–3(b); 111.108–3(b).

(5) Class Number 3620, Approval Standard for Purged and Pressurized Electrical Equipment for Hazardous (Classified) Locations, January 2018 (''FM Approvals Class Number 3620''); IBR approved for §§111.105–3(b); 111.106–3(b); 111.108–3(b).

(j) *Institute of Electrical and Electronic Engineers (IEEE),* 3 Park Avenue, New York, NY 10016–5997; 800–701–4333; *contactcenter@ieee.org; www.ieee.org.*

(1) IEEE Std. C37.04–2018, IEEE Standard Rating for Ratings and Requirements for AC High-Voltage Circuit Breakers with Rated Maximum Voltage Above 1000 V, approved December 5, 2018 (''IEEE C37.04''); IBR approved for §111.54–1(c).

(2) IEEE Std. C37.010–2016, IEEE Application Guide for AC High-Voltage Circuit Breakers >1000 Vac Rated on a Symmetrical Current Basis, approved September 22, 2016 (''IEEE C37.010''); IBR approved for §111.54–1(c).

(3) IEEE Std. C37.12–2018, IEEE Guide for Specifications of High-Voltage Circuit Breakers (over 1000 V), approved December 5, 2018 (''IEEE C37.12''); IBR approved for §111.54–1(c).

(4) IEEE Std. C37.13–2015, IEEE Standard for Low-Voltage AC Power Circuit Breakers Used in Enclosures, approved December 5, 2015 (''IEEE C37.13''); IBR approved for §111.54–1(c).

(5) IEEE Std. C37.14–2015, IEEE Standard for DC (3200 V and below) Power Circuit Breakers Used in Enclosures, approved March 26, 2015 (''IEEE C37.14''); IBR approved for §111.54–1(c).

(6) IEEE Std. C37.27–2015, IEEE Guide for Low-Voltage AC (635 V and below) Power Circuit Breakers Applied with Separately-Mounted Current-Limiting Fuses, approved December 5, 2015 (''IEEE C37.27''); IBR approved for §111.54–1(c).

(7) IEEE Std. 45.1–2017 IEEE Recommended Practice for Electrical Installations on Shipboard—Design, approved March 23, 2017 (''IEEE 45.1–

2017''); IBR approved for §§ 111.15–2(b); 111.40–1; 111.75–5(b); 111.105–41; and 113.65–5.

(8) IEEE Std. 45.2–2011, IEEE Recommended Practice for Electrical Installations on Shipboard—Controls and Automation, approved September 10, 2011 (''IEEE 45.2–2011''); IBR approved for §§ 111.33–3(a); 111.33–5(a).

(9) IEEE Std. 45.6–2016; IEEE Recommended Practice for Electrical Installations on Shipboard—Electrical Testing, approved December 7, 2016 (''IEEE 45.6–2016''); IBR approved for § 111.60–21.

(10) IEEE Std. 45.7–2012, IEEE Recommended Practice for Electrical Installations on Shipboard—AC Switchboards, approved March 29, 2012 (''IEEE 45.7–2012''); IBR approved for §§ 111.30–1; 111.30–5(a); 111.30–19(a).

(11) IEEE Std. 45.8–2016, IEEE Recommended Practice for Electrical Installations on Shipboard—Cable Systems, approved January 29, 2016 (''IEEE 45.8–2016''); IBR approved for §§ 111.05–7; 111.60–5(a); 111.60–13(a); 111.60–19(b).

(12) IEEE Std. 100, The Authoritative Dictionary of IEEE Standards Terms, Seventh Edition, published December 2000 (''IEEE 100''); IBR approved for § 110.15–1(a).

(13) IEEE Std. 1202–2006, IEEE Standard for Flame-Propagation Testing of Wire and Cable, (''IEEE 1202''), including:

(i) IEEE Std. 1202–2006 (R2012), reaffirmed December 5, 2012; IBR approved for §§ 111.60–6(a); 111.107–1(c); and

(ii) IEEE Std. 1202–2006/Cor 1–2012, Corrigendum 1 approved November 21, 2012; IBR approved for §§ 111.60–6(a); 111.107–1(c).

(15) IEEE Std. 1580–2010, IEEE Recommended Practice for Marine Cable for Use on Shipboard and Fixed or Floating Facilities, approved September 30, 2010 (''IEEE 1580''); IBR approved for §§ 111.60–1(a); 111.60–2; 111.106–5(a).

(k) *International Electrotechnical Commission (IEC),* 3 Rue de Varembe, Geneva, Switzerland; +41 22 919 02 11; *www.iec.ch*; *https://www.iec.ch/contact?id=40499*.

(1) IEC 60068–2–52:2017, Environmental testing—Part 2–52: Tests—Test Kb: Salt mist, cyclic (sodium chloride solution), Edition 3.0, 2017–11; IBR approved for § 110.15–1(b).

(2) IEC 60079–1:2014, Explosive atmospheres—Part 1: Equipment protection by flameproof enclosures ''d'', Edition 7.0, 2014–06; IBR approved for §§ 111.105–3(b); 106–3(b); 111.108–3(b).

(3) IEC 60079–2:2014, Explosive atmospheres—Part 2: Equipment protection by pressurized enclosures ''p'', including:

(i) IEC 60079–2:2014, Edition 6.0, 2014–07, IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b); and

(ii) IEC 60079–2:2014/COR1:2015, with Corrigendum 1 (2015), Edition 6.0, 2014–07; IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(4) IEC 60079–5:2015, Explosive atmospheres—Part 5: Equipment protection by powder filling ''q'', Edition 4.0, 2015–02, IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(5) IEC 60079–6:2015, Explosive atmospheres—Part 6: Equipment protection by liquid immersion ''o'', Edition 4.0, 2015–02; IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(6) IEC 60079–7:2015+AMD1:2017 CSV (Consolidated Version), Explosive atmospheres—Part 7: Equipment protection by increased safety ''e'', Edition 5.1, 2017–08, (''IEC 60079–7:2015''); IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(7) IEC 60079–11:2011, Explosive atmospheres—Part 11: Equipment protection by intrinsic safety ''i'' (''IEC 60079–11:2011''), including:

(i) IEC 60079–11:2011, Edition 6.0, 2011–06; IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b); and

(ii) IEC 60079–11:2011, Corrigendum 1 (January 2012), Edition 6.0, 2011–06; IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(8) IEC 60079–13:2017, Explosive atmospheres—Part 13: Equipment protection by pressurized room ''p'' and artificially ventilated room ''v'', Edition 2.0, 2017–05; IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(9) IEC 60079–15:2017, Explosive atmospheres—Part 15: Equipment protection by type of protection ''n'', Edition 5.0, 2017–12; IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(10) IEC 60079–18:2017 (Consolidated Version), Explosive atmospheres—Part

18: Equipment protection by encapsulation ''m'', Edition 4.1, 2017–08, (''IEC 60079–18:2017''); IBR approved for §§ 111.105–3 (b)and (e); 111.106–3(b) and (d); 111.108–3(b) and (e).

(11) IEC 60079–25:2010, Explosive atmospheres—Part 25: Intrinsically safe electrical systems, Edition 2.0, 2010–02; IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(12) IEC 60079–30–1:2007, Part 30–1: Electrical resistance trace heating—General and testing requirements, First Edition, 2007–01; IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(13) IEC 60092–101:2018, Electrical installations in ships—Definitions and general requirements, Edition 5.0, 2018–10; IBR approved for §§ 110.15–1(a); 111.81–1(d).

(14) IEC 60092–201:2019, Electrical installations in ships—Part 201: System design—General, Edition 5.0, 2019–09; IBR approved for §§ 111.70–3(a); 111.81–1(d).

(15) IEC 60092–202:2016, Electrical installations in ships—Part 202: System design—Protection, Edition 5.0, 2016–09; IBR approved for §§ 111.12–7(b); 111.50–3(c), (e), and (g); 111.53–1(a); 111.54–1(a).

(16) IEC 60092–301:1980, Electrical installations in ships—Part 301: Equipment—Generators and motors, (''IEC 60092–301:1980''), including:

(i) IEC 60092–301:1980, Third Edition, copyright 1980; IBR approved for §§ 111.12–7(b); 111.70–1(a);

(ii) IEC 60092–301:1980/AMD1:1994, Amendment 1 (1994–05), copyright 1980, IBR approved for §§ 111.12–7(b); 111.70–1(a); and

(iii) IEC 60092–301:1980/AMD2:1995, Amendment 2 (1995–04), copyright 1980; IBR approved for §§ 111.12–7(b); 111.70–1(a).

(17) IEC 60092–302:1997, Electrical Installation in ships—Part 302: Low-voltage switchgear and control gear assemblies, Fourth Edition, 1997–05; IBR approved for §§ 111.30–1; 111.30–5; 111.30–19(a).

(18) IEC 60092–303:1980, Electrical installations in ships—Part 303: Equipment—Transformers for power and lighting, (''IEC 60092–303:1980), including:

(i) IEC 60092–303:1980, Third Edition, 1997–09, copyright 1980; IBR approved for § 111.20–15; and

(ii) IEC 60092–303:1980/AMD1:1997, Amendment 1, copyright 1980; IBR approved for § 111.20–15.

(19) IEC 60092–304:1980, Electrical installations in ships—Part 304: Equipment—Semiconductor convertors, (''IEC 60092–304:1980''), including:

(i) IEC 60092–304:1980, Third Edition, (1980–01); IBR approved for §§ 111.33–3(a); 111.33–5(b); and

(ii) IEC 60092–304:1980/AMD1:1995, Amendment 1, 1995–04; IBR approved for §§ 111.33–3(a); 111.33–5(b).

(20) IEC 60092–306:2009, Electrical installation in ships—Part 306: Equipment—Luminaires and lighting accessories, Edition 4.0, 2009–11; IBR approved for §§ 111.75–20(a) and (b); 111.81–1(d).

(21) IEC 60092–350:2014, Electrical installations in ships—Part 350: General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications, Edition 4.0, 2014–08; IBR approved for §§ 111.60–1(a); 111.106–5(a).

(22) IEC 60092–352:2005, Electrical installation in ships—Part 352: Choice and Installation of electrical cables, Third Edition, 2005–09; IBR approved for §§ 111.60–1; 111.60–5(a) and (b); 111.81–1(d).

(23) IEC 60092–353:2016, Electrical installation in ships—Part 353: Power cables for rated voltages 1 kV and 3 kV, Edition 4.0, 2016–09; IBR approved for §§ 111.60–1(a); 111.60–5(a); 111.106–5(a).

(24) IEC 60092–354:2014, Electrical installations in ships—Part 354: Single- and three-core power cables with extruded solid insulation for rated voltages 6 kV (U_m=7,2 kV) up to 30 kV (U_m=36 kV), Edition 3.0, 2014–08; IBR approved for § 111.60–1(a).

(25) IEC 60092–360:2014, Electrical installations in ships—Part 360: Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables, Edition 1.0, 2014–04; IBR approved for § 111.60–1(a).

(26) IEC 60092–376:2017, Electrical installations in ships—Part 376: Cables for control and instrumentation circuits 150/250 V (300 V), Third Edition, 2017–05; IBR approved for § 111.60–1(a).

(27) IEC 60092–401:1980, Electrical installations in ships—Part 401: Installation and test of completed installation, (''IEC 60092–401:1980''), including:

(i) IEC 60092–401:1980, Third Edition, 1980; IBR approved for §§ 111.05–9; 111.81–1(d);

(ii) IEC 60092–401:1980/AMD1:1987, Amendment 1, (1987–02), 1980; IBR approved for §§ 111.05–9; 111.81–1(d); and

(iii) IEC 60092–401:1980/AMD2:1997, Amendment 2 (1997–04), 1980; IBR approved for §§ 111.05–9; 111.81–1(d).

(28) IEC 60092–502:1999, Electrical installations in ships—Part 502: Tankers—Special features, Fifth Edition, 1999–02; IBR approved for §§ 111.81–1(d); 111.105–1, 111.105–3(b); 111.105–11(c); 111.105–17(b); 111.105–50(a), (b), and (c); 111.106–3(b); 111.106–5(c); 111.106–15(a); 111.108–3(b).

(29) IEC 60092–503:2007(E), Electrical installations in ships—Part 503: Special features—AC supply systems with voltages in the range of above 1kV up to and including 15 kV, Second Edition, 2007–06 (''IEC 60092–503:2007''); IBR approved for § 111.30–5(a).

(30) IEC 60331–11:1999+A1:2009, Tests for electric cables under fire conditions—Circuit integrity—Part 11: Apparatus—Fire alone at a flame temperature of at least 750 °C, Edition 1.1, 2009–07, (''IEC 60331–11:2009''); IBR approved for § 113.30–25(j).

(31) IEC 60331–21:1999, Tests for electric cables under fire conditions—Circuit integrity—Part 21: Procedures and requirements—Cables of rated voltage up to and including 0.6/1.0kV, First Edition, 1999–04; IBR approved for § 113.30–25(j).

(32) IEC 60332–1–1:2015 (Consolidated Version), Tests on electric and optical fibre cables under fire conditions—Part 1–1: Test for vertical flame propagation for a single insulated wire or cable—Apparatus, Edition 1.1, 2015–07; IBR approved for § 111.30–19(b).

(33) IEC 60332–1–2:2015 (Consolidated Version), Tests on electric and optical fibre cables under fire conditions—Part 1–2: Test for vertical flame propagation for a single insulated wire or cable—Procedure for 1kW pre-mixed flame, Edition 1.1, 2015–07, IBR approved for § 111.30–19(b).

(34) IEC 60332–3–21:2018, Tests on electric and optical fibre cables under fire conditions—Part 3–21: Test for vertical flame spread of vertically-mounted bunched wires or cables—Category A F/R, Edition 2.0, 2018–07; IBR approved for §§ 111.60–1(b); 111.60–2; 111.107–1(c).

(35) IEC 60332–3–22:2018, Tests on electric and optical fibre cables under fire conditions—Part 3–22: Test for vertical flame spread of vertically-mounted bunched wires or cables—Category A, Edition 2.0, 2018–07; IBR approved for §§ 111.60–1(b); 111.60–2; 111.60–6(a); 111.107–1(c).

(36) IEC 60529:2013 (Consolidated Version), Degrees of protection provided by enclosures (IP Code), Edition 2.2, 2013–08, (''IEC 60529:2013''); IBR approved for §§ 110.15–1(a); 111.01–9(a), (c), and (d); 113.10–7; 113.20–3; 113.25–11(a); 113.30–25(e) and (i); 113.37–10(b); 113.40–10(b); 113.50–5(g).

(37) IEC 60533:2015, Electrical and electronic installations in ships—Electromagnetic compatibility—Ships with a metallic hull, Edition 3.0, 2015–08; IBR approved for § 113.05–7(a).

(38) IEC 60947–2:2019 (Consolidated Version), Low-voltage switchgear and controlgear—Part 2: Circuit-breakers, Edition 5.1, 2019–07, (''IEC 60947–2:2019''); IBR approved for § 111.54–1(b) and (c).

(39) IEC 61363–1:1998, Electrical installations of ships and mobile and fixed offshore units—Part 1: Procedures for calculating short-circuit currents in three-phase a.c., First Edition, 1998–02; IBR approved for § 111.51–4(b).

(40) IEC 61439–6:2012, Low-voltage switchgear and control gear assemblies—Part 6: Busbar trunking systems (busways), Edition 1.0, 2012–05; IBR approved for § 111.59–1.

(41) IEC 61660–1:1997, Short-circuit currents in d.c. auxiliary installations in power plants and substations—Part 1: Calculation of short-circuit currents, (''IEC 61660–1:1997''), including:

(i) IEC 61660–1:1997, First Edition, 1997–06; IBR approved for § 111.51–4(b);

(ii) IEC 61660–1:1997/COR1:1999, Corrigendum 1 (March 1999), First Edition; IBR approved for § 111.51–4(b); and

(iii) IEC 61660–1:1997/COR2:2000, Corrigendum 2 (March 2000), First Edition; IBR approved for § 111.51–4(b).

(42) IEC 61892–7:2019, Mobile and fixed offshore units—Electrical installations—Part 7: Hazardous areas, Edition

4.0, 2019–04; IBR approved for §§ 111.105–1; 111.105–3(b); 111.105–17(b); 111.108–3(b).

(43) IEC 62271–100:2017 (Consolidated Version), High-voltage switchgear and controlgear—Part 100: Alternating-current circuit-breakers, Edition 2.2, 2017–06; IBR approved for § 111.54–1(c).

(44) IEC/TR 60092–370:2009, Technical Report—Electrical installations in ships—Part 370: Guidance on the selection of cables for telecommunication and data transfer including radio-frequency cables, Edition 1.0, 2009–07; IBR approved for § 111.60–1(a).

(45) IEC/IEEE 80005–1:2019, Utility connections in port—Part 1: High voltage shore connection (HVSC) systems—General requirements, Edition 2.0, 2019–03; IBR approved for § 111.83–7.

(l) *International Maritime Organization (IMO Publications Section)*, 4 Albert Embankment, London SE1 7SR, United Kingdom; +44 (0) 20 7735 7611; *sales@imo.org; www.imo.org*.

(1) SOLAS Consolidated Edition 2014, Consolidated Text of the International Convention for the Safety of Life at Sea, 1974, and its Protocol of 1988: article, annexes and certificates, (Incorporating all amendments in effect from July 1, 2014), Sixth edition, 2014 (''IMO SOLAS 74''); IBR approved for §§ 111.99–5; 112.15–1(r); 113.25–6.

(2) IMO Resolution A.1023(26), Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009, January 18, 2010 (''2009 IMO MODU Code''); IBR approved for § 111.108–3(b).

(m) *International Standards Organization (ISO)*, Chemin de Blandonnet 8, CP 401—1214 Vernier, Geneva, Switzerland; +41 22 749 01 11; *customerservice@iso.org; www.iso.org*.

(1) ISO 25861:2007(E), Ships and marine technology—Navigation—Daylight signalling lamps, First edition, December 1, 2007, (''ISO 25861''); IBR approved for § 111.75–18.

(2) [Reserved]

(n) *Lloyd's Register*, 71 Fenchurch Street, London EC3M 4BS, UK; +44–0–20–7709–9166; *www.lr.org/en/type-approval-test-specifications*.

(1) Lloyd's Register Type Approval System—Test Specification Number 1, March 2019; IBR approved for § 113.05–7(a).

(2) [Reserved]

(o) *National Electrical Manufacturers Association (NEMA)*, 1300 North 17th Street, Suite 900, Arlington, VA 22209; 703–841–3200; *communications@nema.org; www.nema.org*.

(1) NEMA ICS 2–2000 (R2005), Industrial Control and Systems Controllers, Contactors, and Overload Relays, Rated 600 Volts, copyright 2006 (''NEMA ICS 2''); IBR approved for § 111.70–3(a).

(2) NEMA ICS 2.3–1995 (R2002, R2008), Instructions for the Handling, Installation, Operation, and Maintenance of Motor Control Centers Rated not More Than 600 Volts, copyright 2008 (''NEMA ICS 2.3''); IBR approved for § 111.70–3(a).

(3) NEMA ICS 2.4–2003 (R2012), NEMA and IEC Devices for Motor Service—A Guide for Understanding the Differences, copyright 2012 (''NEMA ICS 2.4''); IBR approved for § 111.70–3(a).

(4) NEMA 250–2018, Enclosures for Electrical Equipment (1000 Volts Maximum), 2018 (''NEMA 250''); IBR approved for §§ 110.15–1(b); 111.01–9(a), (b), (c), and (d); 113.10–7; 113.20–3; 113.25–11(a); 113.30–25(e) and (i); 113.37–10(b); 113.40–10(b); 113.50–5(g).

(5) ANSI/NEMA WC–70–2009, Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy, February 23, 2009, (''ANSI/NEMA WC–70''); IBR approved for § 111.60–13(a) and (c).

(p) *National Fire Protection Association (NFPA)*, 1 Batterymarch Park, Quincy, MA 02169; 617–770–3000; *stds__admin@nfpa.org; www.nfpa.org*.

(1) NFPA 70, National Electrical Code, 2017 Edition, ANSI-approved August 24, 2016 (''NFPA 70''), IBR approved for §§ 110.15–1; 111.05–33; 111.20–15; 111.50–3(c),(e), and (g); 111.50–7(a); 111.50–9; 111.53–1(a); 111.54–1(a); 111.55–1(a); 111.59–1; 111.60–7; 111.60–13(a)–(c); 111.60–23(d) and (f); 111.81–1(d); 111.105–1; 111.105–3(b); 111.105–11(a) and (c); 111.105–17(b); 111.106–3(b); 111.106–5(c); 111.107–1(b); 111.108–3(b).

(2) NFPA 77, Recommended Practice on Static Electricity, 2019 Edition, ANSI-approved May 24, 2018, (''NFPA 77''); IBR approved for § 111.105–27(b).

(3) NFPA 99, Health Care Facilities Code, 2018 Edition, ANSI-approved September 6, 2017, (''NFPA 99''); IBR approved for § 111.105–37.

(4) NFPA 496, Standard for Purged and Pressurized Enclosures for Electrical Equipment, 2017 Edition, ANSI-approved June 2, 2016 (''NFPA 496 (2017)''); IBR approved for §§ 111.105–3(d); 111.106–3(c); 111.108–3(d).

(q) *UL,* Comm 2000, 151 Eastern Avenue, Bensenville, IL 60106; (888) 853–3512; *https://www.ul.com/customer-service*; *www.shopulstandards.com.*

(1) UL 44, Standard for Safety Thermoset-Insulated Wire and Cable, Nineteenth Edition, January 9, 2018 (''ANSI/UL 44''); IBR approved for § 111.60–11(c).

(2) UL 50, Standard for Safety Enclosures for Electrical Equipment, Non-Environmental Considerations, Thirteenth Edition, October 16, 2015 (''UL 50''); IBR approved for § 111.81–1(d).

(3) UL 62, Standard for Safety Flexible Cords and Cables, Twentieth Edition, July 6, 2018, (''ANSI/UL 62''); IBR approved for § 111.60–13(a).

(4) UL 83, Standard for Safety Thermoplastic-Insulated Wires and Cables, Sixteenth Edition, July 28, 2017 (''ANSI/UL 83''); IBR approved for § 111.60–11(c).

(5) UL 484, Standard for Safety Room Air Conditioners, Ninth Edition, February 7, 2014, (''ANSI/UL 484''); IBR approved for § 111.87–3(a).

(6) UL 489, Standard for Safety Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures, Thirteenth Edition, October 24, 2016 (''ANSI/UL 489''); IBR approved for §§ 111.01–15(c); 111.54–1(b).

(7) UL 514A, Standard for Safety Metallic Outlet Boxes, Eleventh Edition, February 1, 2013, (''ANSI/UL 514A''); IBR approved for § 111.81–1(d).

(8) UL 514B, Standard for Safety Conduit, Tubing, and Cable Fittings, Sixth Edition, revised November 21, 2014, (''ANSI/UL 514B''); IBR approved for § 111.81–1(d).

(9) UL 514C, Standard for Safety Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers, Fourth Edition, revised December 10, 2014, (''ANSI/UL 514C''); IBR approved for § 111.81–1(d).

(10) UL 674, Standard for Safety Electric Motors and Generators for Use in Hazardous (Classified) Locations, Fifth Edition, May 31, 2011 (''ANSI/UL 674''); IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(11) UL 823, Electric Heaters for Use in Hazardous (Classified) Locations, Ninth Edition, revised November 15, 2007, (''ANSI/UL 823''); IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(12) UL 844, Standard for Safety Luminaires for Use in Hazardous (Classified) Locations, Thirteenth Edition, June 29, 2012, (''ANSI/UL 844''); IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(13) UL 913, Standard for Safety Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations, Eighth Edition, 2013, (''ANSI/UL 913''); IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(14) UL 1042, Standard for Safety Electric Baseboard Heating Equipment, Fifth Edition, revised September 9, 2014, (''ANSI/UL 1042''); IBR approved for § 111.87–3(a).

(15) UL 1072, Standard for Safety Medium-Voltage Power Cables, Fourth Edition, revised June 19, 2013, (''ANSI/UL 1072''); IBR approved for § 111.60–1(a).

(16) UL 1104, Standard for Safety for Marine Navigation Lights, Second Edition, October 29, 1998 (''ANSI/UL 1104''); IBR approved for § 111.75–17(d).

(17) UL 1203—Standard for Safety: Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations, Fifth Edition, revised April 24, 2015, (''ANSI/UL 1203''); IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(18) UL 1309, Standard for Safety Marine Shipboard Cables, Third Edition, Apr. 21, 2017 (''ANSI/UL 1309''); IBR approved for §§ 111.60–1(a); 111.106–5(a).

(19) UL 1598, Standard for Safety Luminaires, Fourth Edition, August 28, 2018 (''ANSI/UL 1598''); IBR approved for § 111.75–20(b).

(20) UL 1598A, Standard for Safety Supplemental Requirements for Luminaires for Installation on Marine Vessels, First Edition (with revisions through April 17, 2015), December 4, 2000 (''ANSI/UL 1598A''); IBR approved for § 111.75–20(a) and (b).

(21) UL 2021, Standard for Safety Fixed and Location-Dedicated Electric Room Heaters, Fourth Edition, September 30, 2015 (''ANSI/UL 2021''); IBR approved for § 111.87–3(a).

(22) UL 2225, Standard for Safety Cables and Cable-Fittings for use in Hazardous (Classified) Locations, Fourth Edition, September 30, 2013 (''ANSI/UL 2225''); IBR approved for §§ 111.105–3(b); 111.106–3(b); 111.108–3(b).

(23) UL 2556, Standard for Safety Wire and Cable Test Methods, Fourth Edition, Dec. 15, 2015 (''ANSI/UL 2556''); IBR approved for §§ 111.30–19(b); 111.60–2; 111.60–6(a).

(24) UL 60079–18, Standard for Safety Explosive Atmospheres—Part 18: Equipment Protection by Encapsulation ''m'', Fourth Edition, revised February 20, 2017, (''ANSI/UL 60079–18''); IBR approved for §§ 111.105–3(e); 111.106–3(d); 111.108–3(e).[USCG–2020–0075, 88 FR 16354, Mar. 16, 2023]

Subpart 110.15—Terms Used in This Subchapter

§ 110.15–1 Definitions.

As used in this subchapter—

(a) The electrical and electronic terms are defined in IEEE 100 or IEC 60092–101:2018 (both incorporated by reference; see § 110.10–1).

(b) In addition to the definitions in paragraph (a) of this section—

Coastwise Vessel means a vessel that normally navigates the waters of any ocean or the Gulf of America 20 nautical miles or less offshore and is certificated for coastwise navigation by the Coast Guard.

Commandant means the Commandant of the Coast Guard.

Constructed means the date—

(i) The vessel's keel was laid; or

(ii) Construction identifiable with the vessel or facility began and assembly of that vessel or facility commenced comprising of 50 metric tons or at least 1 percent of the estimated mass of all structural material, whichever is less.

Corrosion resistant material or *finish* means any material or finish that meets the testing requirements of ASTM B117 (incorporated by reference; see § 110.10–1) or test Kb in IEC 60068–2–52:2017.

Dead ship condition is where the entire machinery installation, including the power supply, is out of operation and that auxiliary services such as compressed air, starting current from batteries etc., for bringing the main propulsion into operation and for the restoration of the main power supply are not available.

Drilling loads means all loads associated exclusively with the drilling operation including power to the drill table, mud system, and positioning equipment.

Embarkation station means a location from which persons embark into survival craft or are assembled before embarking into survival craft.

Emergency squad means the crew designated on the station bill as the nucleus of a damage control party.

Flashpoint means the minimum temperature at which a liquid gives off a vapor in sufficient concentration to form an ignitable mixture with air near the surface of the liquid, as specified by the appropriate test procedure and apparatus.

Great Lakes vessel means a vessel that navigates exclusively on the Great Lakes and their connecting and tributary waters.

IECEx System means an international certification system covering equipment that meets the provisions of the IEC 60079 series of standards (as incorporated by reference, see § 110.10–1). The IECEx System is comprised of an Ex Certification Body and an Ex Testing Laboratory that has been accepted into the IECEx System after satisfactory assessment of their competence to ISO/IEC Standard 17025, ISO/IEC Guide 65, IECEx rules of procedures, IECEx operational documents, and IECEx technical guidance documents as part of the IECEx assessment process.

Independent laboratory means a laboratory that is accepted by the Commandant under part 159 of this subchapter for the testing and listing or certification of electrical equipment.

Integral tank means a tank that is a structural part of the vessel's hull and is influenced in the same manner and by the same loads that stress the adjacent hull structure.

Location not requiring an exceptional degree of protection means a location which is not exposed to the environmental conditions outlined in the definition for locations requiring exceptional degrees of protection. This location requires the degree of protection

of §111.01–9(c) or (d) of this subchapter. These locations include—

(i) An accommodation space;

(ii) A dry store room;

(iii) A passageway adjacent to quarters;

(iv) A water closet without a shower or bath;

(v) A radio, gyro and chart room; and

(vi) A location with similar environmental conditions.

Location requiring an exceptional degree of protection means a location exposed to weather, seas, splashing, pressure-directed liquids, or similar moisture conditions. These locations include—

(i) On deck;

(ii) A machinery space;

(iii) A cargo space;

(iv) A location within a galley or pantry area, laundry, or water closet which contains a shower or bath; and

(v) Other spaces with similar environmental conditions.

Non-hazardous location means an area in which an explosive gas or dust atmosphere is not expected to be present in quantities that require special precautions for the construction, installation, and use of electrical equipment.

Nonsparking fan means nonsparking fan as defined in ABS Marine Vessel Rules (incorporated by reference; see §110.10–1), section 4–8–3/11.

OCS activity has the same meaning as it does in 33 CFR 140.10.

Outer Continental Shelf (OCS) has the same meaning as it does in 33 CFR 140.10.

Ship's service loads means the electrical equipment for all auxiliary services necessary for maintaining the vessel in a normal, operational and habitable condition. Ship's service loads include, but are not limited to, all safety, lighting, ventilation, navigational, communications, habitability, and propulsion auxiliary loads. Electrical propulsion motor, bow thruster motor, cargo transfer, drilling, cargo refrigeration for other than Class 5.2 organic peroxides and Class 4.1 self-reactive substances, and other industrial type loads are not included.

Shut-off valve is a valve that closes a pipeline and provides nominal metal-to-metal contact between the valve operating parts, including the disc and gate, and the valve body.

Special Division 1 is a Class I, Zone 0 hazardous location in Article 505 of NFPA 70 (incorporated by reference, see §110.10–1) that may require special considerations for electrical equipment installed in such locations.

Waterproof means watertight; except that, moisture within or leakage into the enclosure is allowed if it does not interfere with the operation of the equipment enclosed. In the case of a generator or motor enclosure, *waterproof* means watertight; except that, leakage around the shaft may occur if the leakage is prevented from entering the oil reservoir and the enclosure provides for automatic drainage.

Watertight means enclosed so that equipment meets at least a NEMA 250 Type 4 or 4X or an IEC 60529:2013 IP 56 rating.

Zone 0 is a hazardous location in which an explosive gas or vapor in mixture with air is continuously present or present for long periods.

Zone 1 is a hazardous location in which an explosive gas or vapor in mixture with air is likely to occur in normal operating conditions.

Zone 2 is a hazardous location in which an explosive gas or vapor in mixture with air is not likely to occur in normal operating conditions, or in which such a mixture, if it does occur, will only exist for a short time.

[CGD 94–108, 61 FR 28274, June 4, 1996, as amended at 62 FR 23907, May 1, 1997; 62 FR 27659, May 20, 1997; USCG–2000–7790, 65 FR 58462, Sept. 29, 2000; USCG–2003–16630, 73 FR 65195, Oct. 31, 2008; USCG–2013–0671, 78 FR 60152, Sept. 30, 2013; USCG–2012–0208, 79 FR 48929, Aug. 18, 2014; USCG–2012–0850, 80 FR 16995, Mar. 31, 2015; USCG–2016–0498, 82 FR 35091, July 28, 2017; USCG–2020–0075, 88 FR 16358, Mar. 16, 2023]

Subpart 110.20—Equivalents

§110.20–1 Equivalents.

The Commanding Officer, Marine Safety Center (MSC), may approve any arrangement, fitting, appliance, apparatus, equipment, calculation, information, or test that provides a level of safety equivalent to that established by specific provisions of this subchapter. Requests for approval must be

submitted to the Marine Safety Center. If necessary, the Marine Safety Center may require engineering evaluations and tests to demonstrate the equivalence of the substitute.

[CGD 94–108, 61 FR 28275, June 4, 1996]

Subpart 110.25—Plan Submittal

§ 110.25–1 Plans and information required for new construction.

The following plans, if applicable to the particular vessel, must be submitted for Coast Guard review in accordance with § 110.25–3:

NOTE 1 TO § 110.25–1 INTRODUCTORY TEXT: A Navigation and Vessel Inspection Circular on the Subject of ''Coast Guard Review of Merchant Vessel Plans and Specifications'' is available from the offices listed in § 110.25–3. The Circular recommends practices and procedures for plan submittals.

(a) Elementary one-line wiring diagram of the power system, supported, by cable lists, panelboard summaries, and other information including—

(1) Type and size of generators and prime movers;

(2) Type and size of generator cables, bus-tie cables, feeders, and branch circuit cables;

(3) Power, lighting, and interior communication panelboards with number of circuits and rating of energy consuming devices;

(4) Type and capacity of storage batteries;

(5) Rating of circuit breakers and switches, interrupting capacity of overcurrent devices, and rating or setting of overcurrent devices;

(6) Computations of short circuit currents in accordance with subpart 111.51 of part 111 of this subchapter; and

(7) Overcurrent protective device coordination analysis for each generator distribution system of 1500 kilowatts or above that includes selectivity and shows that each overcurrent device has an interrupting capacity sufficient to interrupt the maximum asymmetrical short-circuit current available at the point of application.

(b) Electrical plant load analysis including connected loads and computed operating loads for each condition of operation.

(c) Elementary and isometric or deck wiring plans, including the location of each cable splice, a list of symbols, and the manufacturer's name and identification of each item of electrical equipment, of each—

(1) Steering gear circuit and steering motor controller;

(2) General emergency alarm system;

(3) Sound-powered telephone or other fixed communication system;

(4) Power-operated boat winch;

(5) Fire detecting and alarm system;

(6) Smoke detecting system;

(7) Electric watertight door system;

(8) Fire door holding systems;

(9) Public address system;

(10) Manual alarm system; and

(11) Supervised patrol system.

(d) Deck wiring or schematic plans of power systems and lighting systems, including symbol lists, with manufacturer's name and identification of each item of electric equipment, and showing:

(1) Locations of cables;

(2) Cable sizes and types;

(3) Locations of each item of electric equipment;

(4) Locations of cable splices.

(e) Switchboard wiring diagram.

(f) Switchboard material and nameplate list.

(g) Elementary wiring diagram of metering and automatic switchgear.

(h) Description of operation of propulsion control and bus transfer switchgear.

(i) For vessels with hazardous locations for which subparts 111.105, 111.106, and 111.108 of part 111 of this subchapter are applicable, plans showing the extent and classification of all hazardous locations, including information on—

(1) Method of classification, Division or Zone, used to determine hazardous locations;

(2) Equipment identification by manufacturer's name and model number;

(3) Equipment use within the system;

(4) Cable parameters;

(5) Equipment locations;

(6) Installation details; and

(7) A certificate of testing, and listing or certification, by an independent laboratory, where required by the respective standard.

(j) Plans and installation instructions for each approved component of an intrinsically safe system listed or

certified by an independent laboratory (see §§ 111.105–11 and 111.106–5(c) of this subchapter).

(k) Motor starter elementary wiring diagram, enclosure drawing, and starter application.

(l) Plans and information sufficient to evaluate equipment to be considered for equivalency under § 110.20–1.

(m) Plans and information sufficient to evaluate equipment or systems required to meet the specifications of this Subchapter but not to be approved by the Commandant.

Note 2 to paragraph (m):

This equipment evaluation is generally performed by the Commanding Officer, Marine Safety Center and includes items such as cable splices, signaling lights, shore connection boxes, submersible pumps, engine order telegraph systems, shaft speed and thrust indicator systems, and steering gear failure alarm systems.

(n) Plans and information sufficient to evaluate equipment required by this subchapter to meet a reference standard or military specification.

Note 3 to paragraph (n):

This equipment evaluation is generally performed by the Commanding Officer, Marine Safety Center, and includes items such as circuit breakers, switches, lighting fixtures, air heating equipment, busways, outlet boxes, and junction boxes. Items required to meet an IEEE, IEC, NEMA, ANSI, NFPA, or other industry standard or a military specification are considered acceptable if manufacturer's certification of compliance is indicated on a material list or plan. However, if the standards require third-party testing and listing or certification, proof of listing or certification by an independent laboratory must also be submitted.

(o) Detailed analysis showing compliance with the MC cable requirements in § 111.60–23(b) of this subchapter.

[CGD 74–125A, 47 FR 15232, Apr. 8, 1982, as amended by CGD 81–030, 53 FR 17846, May 18, 1988; CGD 94–108, 61 FR 28275, June 4, 1996; 62 FR 23907, May 1, 1997; USCG–2012–0208, 79 FR 48929, Aug. 18, 2014; USCG–2012–0850, 80 FR 16995, Mar. 31, 2015; USCG–2020–0075, 88 FR 16359, Mar. 16, 2023]

§ 110.25–3 Procedure for submitting plans.

(a) The plans required by § 110.25–1 must be submitted to one of the following Coast Guard offices:

(1) The Commanding Officer, Marine Safety Center, U.S. Coast Guard, 2703 Martin Luther King Jr. Avenue SE, Washington, DC 20593–7403, or by mail to: Commanding Officer (MSC), Attn: Marine Safety Center, U.S. Coast Guard Stop 7430, 2703 Martin Luther King Jr. Avenue SE, Washington, DC 20593–7430, or electronically to *MSC@uscg.mil*.

(2) The Officer in Charge, Marine Inspection at or nearest the place where the vessel is to be built.

(b) Three copies of each plan are required so that one can be returned to the submitter. If the submitter desires additional copies of approved plans, he should submit enough for the necessary distribution.

NOTE 1 TO § 110.25–3: The Coast Guard and a Recognized Classification Society (RCS), IAW 46 CFR part 8, may coordinate plan review for vessels classed by the RCS to eliminate duplication of effort. An applicant for plan review of a vessel that is classed by an RCS should consult Commanding Officer, Marine Safety Center, to determine applicable procedures for submitting plans.

[USCG–2020–0075, 88 FR 16359, Mar. 16, 2023]

Subpart 110.30—Testing and Inspection

§ 110.30–1 General.

(a) This section supplements the general requirements for testing and inspecting vessels in other parts of this chapter.

(b) In the inspection of electric equipment and installations, the rules of the American Bureau of Shipping for materials and construction, and the certificate of classification that refers to them, except as otherwise provided by this subchapter, are accepted as standard.

(c) This subpart must not be construed to imply that shop tests or factory inspections of electric apparatus or equipment of the types conducted by the American Bureau of Shipping are conducted by the Coast Guard. Shop tests of electric apparatus or equipment are conducted by the Coast Guard only when required by this chapter or

when requested, either by the manufacturer, shipbuilder, owner, or the Coast Guard, and agreed to by all.

[CGD 74–125A, 47 FR 15232, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28275, June 4, 1996]

§ 110.30–3 Initial inspection.

The initial inspection, which may be a series of inspections during the construction of the vessel, includes a complete inspection of the electric installation and electric equipment or apparatus. The inspection is to determine that the arrangement, materials, and their installations meet this chapter and the approved plans. The inspection also is to determine that the workmanship of all equipment and apparatus and the installation is satisfactory.

§ 110.30–5 Inspection for certification.

Electric installations and electric equipment must be inspected at the inspection for certification and periodic inspection to determine mechanical and electrical condition and performance. Particular note must be made of circuits added or modified after the original issuance of the Certificate of Inspection.

[USCG–1999–4976, 65 FR 6504, Feb. 9, 2000]

§ 110.30–7 Repairs or alterations.

The Officer in Charge, Marine Inspection must be notified before—

(a) Alterations or modifications that deviate from approved plans; or

(b) Repairs, alterations, or modifications that affect the safety of the vessel.

[CGD 94–108, 61 FR 28275, June 4, 1996]

PART 111—ELECTRIC SYSTEMS—GENERAL REQUIREMENTS

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Sec.

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