

permanently marked on both the battery and the outside of the transmitter. Batteries must be replaced if 50 percent of their useful life has expired or if the transmitter has been used in an emergency situation.

[57 FR 9065, Mar. 16, 1992, as amended at 73 FR 4490, Jan. 25, 2008]

§ 80.1099 Ship sources of energy.

(a) There must be available at all times, while the ship is at sea, a supply of electrical energy sufficient to operate the radio installations and to charge any batteries used as part of a reserve source of energy for the radio installations.

(b) A reserve source of energy to supply radio installations must be provided on every ship for the purpose of conducting distress and safety radio-communications, in the event of failure of the ship's main and emergency sources of electrical power. The reserve sources of energy must be capable of simultaneously operating the VHF radio installation required by § 80.1085(a)(1) and, as appropriate for the sea area or sea areas for which the ship is equipped, either the MF radio installation required by § 80.1089(a)(1), the MF/HF radio installation required by § 80.1091(a)(2)(i) or § 80.1093(a), or the INMARSAT ship earth station required by § 80.1091(a)(1) and any of the additional loads mentioned in paragraphs (d), (e) and (h) of this section for a period of at least:

(1) One hour, on ships constructed on or after February 1, 1995;

(2) One hour, on ships constructed before February 1, 1995, if the emergency source of electrical power complies fully with all relevant requirements of SOLAS, Chapter II-1, Regulation 42 or 43 (as amended); or

(3) Six hours, on ships constructed before February 1, 1995, and on cargo ships of less than 500 tons gross tonnage, if the emergency source of electrical power is not provided or does not comply fully with all relevant requirements of SOLAS, Chapter II-1, Regulation 42 or 43 (as amended).

(c) The reserve sources of energy need not supply independent HF and MF radio installations at the same time. The reserve sources of energy must be independent of the propelling

power of the ship and the ship's electrical system.

(d) Where, in addition to the VHF radio installation, two or more of the other radio installations, referred to in paragraph (b) of this section, can be connected to the reserve sources of energy, they must be capable of simultaneously supplying, for one hour, as specified in paragraph (b) of this section, the VHF radio installation and;

(1) All other radio installations which can be connected to the reserve sources of energy at the same time; or

(2) Whichever of the other radio installations will consume the most power, if only one of the other radio installations can be connected to the reserve sources of energy at the same time as the VHF radio installation.

(e) The reserve sources of energy may be used to supply the electrical lighting required by § 80.1083(b)(4).

(f) Where a reserve source of energy consists of a rechargeable accumulator battery or batteries:

(1) A means of automatically charging such batteries must be provided which must be capable of recharging them to minimum capacity requirements within 10 hours; and

(2) Battery charge levels should be checked at intervals of 30 days or less with equipment turned ON and the battery charger turned OFF. Portable equipment with primary batteries such as EPIRBs and SARTs should be checked at the same intervals using methods recommended by the manufacturer. The results of battery checks should be recorded in the radio log.

(g) The accumulator batteries which provide a reserve source of energy must be installed to ensure: The highest degree of service, a reasonable lifetime, reasonable safety; that the battery temperatures remain within the manufacturer's specifications whether under charge or idle; and that when fully charged, the batteries will provide at least the minimum required hours of operation under all weather conditions.

(h) If an uninterrupted input of information from the ship's navigational or other equipment to a radio installation required by this subpart (including the navigational receiver referred to in SOLAS Chapter IV, Regulation 18) is

needed to ensure its proper performance, means must be provided to ensure the continuous supply of such information in the event of failure of the ship's main or emergency source of electrical power.

(i) An uninterruptible power supply or other means of ensuring a continuous supply of electrical power, within equipment tolerances, shall be provided to all GMDSS equipment that could be affected by normal variations and interruptions of ship's power.

[57 FR 9065, Mar. 16, 1992, as amended at 68 FR 46977, Aug. 7, 2003]

§ 80.1101 Performance standards.

(a) The abbreviations used in this section are as follows:

(1) International Maritime Organization (IMO).

(2) International Telecommunication Union—Telecommunication Standardization Bureau (ITU-T) (Standards formerly designated as CCITT are now designated as ITU-T.)

(3) International Electrotechnical Commission (IEC).

(4) International Organization for Standardization (ISO).

(5) International Telecommunication Union—Radiocommunication Bureau (ITU-R) (Standards formerly designated as CCIR are now designated as ITU-R.)

(b) All equipment specified in this subpart must meet the general requirements for shipboard equipment in conformity with performance specifications listed in this paragraph, which are incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(1) IMO Resolution A.694(17), "General Requirements for Shipborne Radio Equipment Forming Part of the Global Maritime Distress and Safety System (GMDSS) and for Electronic Navigational Aids," adopted 6 November 1991.

(2) ITU-T Recommendation E.161, "Arrangement of Digits, Letters and Symbols on Telephones and Other Devices that Can Be Used for Gaining Access to a Telephone Network," 1993.

(3) ITU-T Recommendation E.164.1, "Series E: Overall Network Operation, Telephone Service, Service Operation

and Human Factors; Operation, Numbering, Routing and Mobile Services—International Operation—Numbering Plan of the International Telephone Service: Criteria and Procedures for the Reservation, Assignment, and Reclamation of E.164 Country Codes and Associated Identification Codes (ICs)," March 1998.

(4) IEC 60092-101, Edition 4.1, "Electrical installations in ships—part 101: Definitions and general requirements," August 2002.

(5) IEC 60533, "Electrical and electronic installations in ships—Electromagnetic compatibility," November 1999.

(6) IEC Publication 60945, "Maritime navigation and radiocommunication equipment and systems—General requirements—Methods of testing and required test results," Edition 4.0, with Annexes, August 2002.

(7) ISO Standard 3791, "Office Machines and Data Processing Equipment—Keyboard Layouts for Numeric Applications," First Edition 1976(E).

(c) The equipment specified in this subpart must also conform to the appropriate performance standards listed in paragraphs (c)(1) through (10) of this section, which are incorporated by reference, and must be tested in accordance with the applicable IEC testing standards listed in paragraph (c)(11) of this section, and are also incorporated by reference.

(1) *NAVTEX receivers*: (i) IMO Resolution A.525(13), "Performance Standards for Narrow-band Direct Printing Telegraph Equipment for the Reception of Navigational and Meteorological Warnings and Urgent Information to Ships," including Annex, adopted 17 November 1983.

(ii) ITU-R Recommendation M.540-2, "Operational and Technical Characteristics for an Automated Direct-printing Telegraph System for Promulgation of Navigational and Meteorological Warnings and Urgent Information to Ships," including Annexes, 1990.

(2) *VHF radio equipment*: (i) IMO Resolution A.803(19), "Performance Standards for Shipborne VHF Radio Installations Capable of Voice Communication and Digital Selective Calling," with Annex, adopted 23 November 1995, as amended by IMO Resolution