or voltage necessary to energize the transmitter unit is considered a component of the transmitter.

(d) *Average ship station antenna* means an actual antenna installed on board ship having a capacitance of 750 picofarads and an effective resistance of 4 ohms at a frequency of 500 kHz, or an artificial antenna having the same electrical characteristics.

[51 FR 31213, Sept. 2, 1986, as amended at 63 FR 36606, July 7, 1998; 68 FR 46966, Aug. 7, 2003; 73 FR 4483, Jan. 25, 2008; 76 FR 67612, Nov. 2, 2011]

§ 80.268 Technical requirements for radiotelephone installation.

All radiotelephone installations in radiotelegraph equipped vessels must meet the following conditions.

(a) The radiotelephone transmitter must be capable of transmission of A3E or H3E emission on 2182 kHz and must be capable of transmitting clearly perceptible signals from ship to ship during daytime, under normal conditions over a range of 150 nautical miles when used with an antenna system in accordance with paragraph (c) of this section. The transmitter must:

(1) Have a duty cycle which allows for transmission of the radiotelephone alarm signal described in § 80.221.

(2) Provide 25 watts carrier power for A3E emission or 60 watts peak power on H3E emission into an artificial antenna consisting of 10 ohms resistance and 200 picofarads capacitance or 50 ohms nominal impedance to demonstrate compliance with the 150 nautical mile range requirement.

(3) Have a visual indication whenever the transmitter is supplying power to the antenna.

(4) Have a two-tone alarm signal generator that meets § 80.221.

(5) This transmitter may be contained in the same enclosure as the receiver required by paragraph (b) of this section. These transmitters may have the capability to transmit J2D or J3E transmissions.

(b)(1) The radiotelephone receiver must receive A3E and H3E emissions when connected to the antenna system specified in paragraph (c) this section and must be preset to 2182 kHz. The receiver must additionally:

(i) Provide an audio output of 50 milliwatts to a loudspeaker when the RF input is 50 microvolts. The 50 microvolt input signal must be modulated 30 percent at 400 Hertz and provide at least a 6 dB signal-to-noise ratio when measured in the rated audio bandwidth.

(ii) Be equipped with one or more loudspeakers capable of being used to maintain a watch on 2182 kHz at the principal operating position or in the room from which the vessel is normally steered.

(2) This receiver may be contained in the same enclosure as the transmitter required by paragraph (a) of this section. These receivers may have the capability to receive J2D or J3E transmissions.

(c) The antenna system must be as nondirectional and efficient as is practicable for the transmission and reception of radio ground waves over seawater. The installation and construction of the required antenna must ensure, insofar as is practicable, proper operation in time of emergency. If the required antenna is suspended between masts or other supports subject to whipping, a safety link must be installed which under heavy stress will reduce breakage of the antenna, the halyards, or any other supporting elements.

(d) The radiotelephone installation must be provided with a device for permitting changeover from transmission to reception and vice versa without manual switching.

(e) An artificial antenna must be provided to permit weekly checks, without causing interference, of the automatic device for generating the radiotelephone alarm signal on frequencies other than the radiotelephone distress frequency.

(f) The radiotelephone installation must be located in the radiotelegraph operating room or in the room from which the ship is normally steered.

(g) Demonstration of the radiotelephone installation may be required by Commission representatives to show compliance with applicable regulations.

(h) The radiotelephone installation must be protected from excessive currents and voltages.

(i) The radiotelephone installation must be maintained in an efficient condition.

[51 FR 31213, Sept. 2, 1986. Redesignated and amended at 68 FR 46973, Aug. 7, 2003; 73 FR 4483, Jan. 25, 2008]

§ 80.271 Technical requirements for portable survival craft radiotelephone transceivers.

(a) Portable survival craft radiotelephone transceivers must comply with the following:

(1) The transceivers must receive and transmit either on 457.525 MHz or on 156.800 MHz;

(2) The receiver must comply with the requirements in part 15, subpart B of this chapter and must have a sensitivity of not more than 2 microvolts;

(3) The effective radiated power of the transmitter must be at least 0.1 watt;

(4) The transceivers must be battery powered and operate for at least four hours with a transmit to receive ratio of 1:9 with no significant adverse effect upon the performance of the device;

(5) The transceivers must have a permanently attached waterproof label with the statement ''Complies with the FCC requirements for survival craft two-way radiotelephone equipment''; and

(6) The antenna must be permanently attached to the device or its removal must require the use of a special tool.

(b) Portable radiotelephone transceivers that are already certificated may be used to satisfy the survival craft radiotelephone requirement until October 1, 1993, provided the device meets the technical requirements in paragraphs (a) (1) through (3) of this section.

(c) Survival craft radiotelephone equipment installed after October 1, 1988, must be certificated to meet the requirements of this section.

(d) After October 1, 1993, all portable radiotelephone transceivers that are used to satisfy the survival craft radiotelephone requirement must have been certificated to meet the requirements of this section.

(e) Portable radiotelephone transceivers which are certified to meet the requirements of this section must be identified by an appropriate note in the Commission's database.

[51 FR 31213, Sept. 2, 1986, as amended at 63 FR 36607, July 7, 1998; 73 FR 4483, Jan. 25, 2008; 76 FR 67612, Nov. 2, 2011]

§ 80.273 Radar standards.

(a) Radar installations on board ships that are required by the Safety Convention or the U.S. Coast Guard to be equipped with radar must comply with the following standards (all incorporated by reference, *see* § 80.7):

(1) IEC 60945;

(2) IEC 62388;

(3) IMO Resolution A.694(17), as revised by IMO Resolution MSC.149(77);

(4) IMO Resolution MSC.191(79);

(5) IMO Resolution MSC.192(79); and

(6) ITU–R M.1177–3.

(b) Radar equipment installed on voluntarily equipped vessels must comply with IEC 62252 (incorporated by reference, *see* § 80.7).

(c) For any ship of 10,000 tons gross tonnage and upwards or that is otherwise required to be equipped with two radar systems, each of the two radar systems must be capable of operating independently and must comply with the specifications, standards and general requirements set forth on paragraph (b) of this section. One of the systems must provide a display with an effective diameter of not less than 340 millimeters (13.4 inches), (16-inch cathode ray tube). The other system must provide a display with an effective diameter of not less than 250 millimeters (9.8 inches), (12-inch cathode ray tube).

(d) Radar installed before March 25, 2008 must meet and be maintained to comply with the Commission's regulations in effect for the equipment on the date of its installation.

[73 FR 4483, Jan. 25, 2008, as amended at 76 FR 67612, Nov. 2, 2011]

§ 80.275 Technical Requirements for Class A Automatic Identification System (AIS) equipment.

(a) Prior to submitting a certification application for a Class A AIS device, the following information must be submitted in duplicate to the Commandant (G–PSE), U.S. Coast Guard, 2100 2nd Street, SW., Washington, DC 20593–0001: