

**WAC 296-54-607 Radio signal systems—Specifications and test procedures.** All radio-signaling systems put into use must meet or exceed the requirements of this section. When systems are altered or repaired they must continue to meet these requirements.

(1) Radio equipment in use at cable logging sites, which is primarily used for voice communication, must be on a separately assigned frequency from radio equipment primarily used to initiate whistles or other audible signaling devices or to control any machine, material handling device or other equipment hazardous to employees.

(2) Radio-signaling systems used to transmit whistle signals or control functions of equipment associated with skyline, highlead, slackline, or cable skidder systems of logging must transmit and decode only by the use of authorized multitone frequencies. Only sequential tones may be used to transmit signals or control equipment when using carrier frequencies of 154.57 or 154.60 MHz.

(3) All radio systems receiver sensitivity must be able to attain 0.4 microvolt, or greater, for 12 dB SINAD ratio for VHF frequencies and 0.5 microvolt, or greater, for UHF frequencies. When interference is a factor, the receiver may be desensitized in the furtherance of safety by a person qualified according to WAC 296-54-605(12).

(4) All radio signal systems must have receiver spurious attenuation of at least 70 dB when measured by the 20 db quieting method and image response attenuation of 60 db when measured by the 20 db quieting method.

(5) All radio signal systems must have receiver selectivity of at least 80 db plus or minus 30 KHz, when measured by the E.\*I.A. SINAD method.

(6) The receiver-decoder tone frequency stability must not exceed 0.006 (0.6%) above or below the assigned tone frequency.

(7) The drift of a transmitter-encoder tone must not exceed 0.006 (0.6%) above or below the assigned tone frequency.

(8) Parts of the radio-signaling system affected by moisture, which may be subjected to the entrance of moisture during use, must be weatherproofed. Transmitters must be tested within fifteen minutes after being subjected to the following conditions and must have the ability to continue functioning properly. The transmitter and receiver must be placed in a humidity chamber for eight hours where the humidity has been maintained at not less than ninety percent and where a 40 degrees C. temperature has been maintained.

(9) Radio-signaling system units must operate within tolerances specified at any temperature within the range of -30 degrees C. to +60 degrees C.

(10) Switches of transmitters used to send whistle signals or activate equipment associated with high lead, slackline, or cable skidder systems of logging must be designed so that two buttons, motions or a combination of these are required simultaneously to cause activation of the system. Arrangement of the activating switches must allow the operator to transmit signals easily but not easily activate a control or command function accidentally.

(11) All receivers intended to be mounted on or in the yarder or similar equipment, and all portable transmitters, must continue to maintain specified mechanical and electrical performance during and after being subjected to vibration of the magnitude and amplitude as follows:

(a) The equipment must be vibrated with simple harmonic motion having an amplitude of 0.015" (total excursion 0.03") with the fre-

quency varied uniformly between 10 and 30 Hz and an amplitude of 0.0075" (total excursion 0.015") with the frequency varied uniformly between 30 and 60 Hz.

(b) The entire cycle of frequencies for each group (i.e., 10 to 30 cycles and 30 to 60 cycles) must be accomplished in five minutes and repeated three times.

(c) The above motion must be applied for a total of thirty minutes in each direction, that is, the directions parallel to both axes of the base and perpendicular to the plane of the base.

(12) All portable transmitters must be able to maintain specified mechanical and electrical performance after being subjected to a shock test as follows: The transmitter must be dropped five times from a height of four feet onto a smooth concrete floor. Each drop must impact a different surface of the transmitter.

(13) Transmitters operating on carrier frequencies of 154.57 MHz and on 154.60 MHz must be limited on maximum power output of 500 mW measured at the antenna terminals.

(14) To minimize the possibility of interference with other signaling systems, the input power of transmitters operating in the 450 MHz range should be limited to only the amount needed to transmit to the receiver of the system effectively.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, and chapter 49.17 RCW. WSR 17-17-131, § 296-54-607, filed 8/22/17, effective 10/22/17. Statutory Authority: RCW 49.17.010, [49.17].040 and [49.17].050. WSR 99-17-117, § 296-54-607, filed 8/18/99, effective 12/1/99. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. WSR 79-10-081 (Order 79-14), § 296-54-607, filed 9/21/79.]