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(5) That the public interest, convenience and necessity will be served through the operation of the proposed station.

[38 FR 18895, July 16, 1973]

§ 73.732 Authorizations.

Authorizations issued to international broadcasting stations by the Commission will be authorizations to permit the construction or use of a particular transmitting equipment combination and related antenna systems for international broadcasting, and to permit broadcasting to zones or areas of reception specified on the instrument of authorization. The authorizations will not specify the frequencies to be used or the hours of use. Requests for frequencies and hours of use will be made as provided in § 73.702. Seasonal schedules, when issued pursuant to the provisions of § 73.702, will become attachments to and part of the instrument of authorization, replacing any such prior attachments.

[38 FR 18895, July 16, 1973]

§ 73.733 Normal license period.

All international broadcast station licenses will be issued so as to expire at the hour of 3 a.m. local time and will be issued for a normal period of 8 years expiring November 1.

[62 FR 5347, Feb. 5, 1997]

§ 73.751 Operating power.

No international broadcast station shall be authorized to install, or be licensed for operation of, transmitter equipment with:

(a) A rated carrier power of less than 50 kilowatts (kW) if double-sideband (DSB) modulation is used,

(b) A peak envelope power of less than 50 kW if single-sideband (SSB) modulation is used, or

(c) A mean power of less than 10 kW if digital modulation is used.

[70 FR 46676, Aug. 10, 2005]

§ 73.753 Antenna systems.

All international broadcasting stations shall operate with directional antennas. Such antennas shall be designed and operated so that the radiated power in the maximum lobe toward the specific zone or area of reception intended to be served shall be at least 10 times the average power from the antenna in the horizontal plane. Radiation in all other directions shall be suppressed to the maximum extent technically feasible. In order to eliminate or mitigate harmful interference, the direction of the maximum lobe may be adjusted upon approval of the Commission.

(Secs. 4, 5, 303, 48 Stat., as amended, 1066, 1068, 1082 (47 U.S.C. 154, 155, 303))

[38 FR 18895, July 16, 1973, as amended at 44 FR 65765, Nov. 15, 1979]

§ 73.754 Frequency monitors.

(a) The licensee of each international broadcast station shall operate a frequency monitor at the transmitter independent of the frequency control of the transmitter.

(b) The frequency monitor shall be designed and constructed in accordance with good engineering practice. It shall have an accuracy sufficient to determine that the operating frequency is within one-half of the allowed tolerance.

[37 FR 25842, Dec. 5, 1972]

§ 73.755 Modulation monitors.

The licensee of each international broadcast station shall have a modulation monitor in operation at the transmitter.

[37 FR 25842, Dec. 5, 1972]

§ 73.756 System specifications for double-sideband (DBS) modulated emissions in the HF broadcasting service.

(a) *Channel spacing*. The nominal spacing for DSB shall be 10 kHz. However, the interleaved channels with a separation of 5 kHz may be used in accordance with the relative protection criteria, provided that the interleaved emission is not to the same geographical area as either of the emissions between which it is interleaved.

(b) *Emission characteristics*—(1) *Nominal carrier frequencies*. Nominal carrier frequencies shall be integral multiples of 5 kHz.

(2) *Audio-frequency band*. The upper limit of the audio-frequency band (at—

3 dB) of the transmitter shall not exceed 4.5 kHz and the lower limit shall be 150 Hz, with lower frequencies attenuated at a slope of 6 dB per octave.

(3) *Modulation processing.* If audio-frequency signal processing is used, the dynamic range of the modulating signal shall be not less than 20 dB.

(4) *Necessary bandwidth.* The necessary bandwidth shall not exceed 9 kHz.

[70 FR 46677, Aug. 10, 2005]

§ 73.757 System specifications for single-sideband (SSB) modulated emissions in the HF broadcasting service.

(a) *System parameters*—(1) *Channel spacing.* In a mixed DSB, SSB and digital environment (see Resolution 517 (Rev.WRC–03)), the channel spacing shall be 10 kHz. In the interest of spectrum conservation, it is also permissible to interleave SSB emissions midway between two adjacent DSB channels, *i.e.*, with 5 kHz separation between carrier frequencies, provided that the interleaved emission is not to the same geographical area as either of the emissions between which it is interleaved. In an all inclusive SSB environment, the channel spacing and carrier frequency separation shall be 5 kHz.

(2) *Equivalent sideband power.* When the carrier reduction relative to peak envelope power is 6 dB, an equivalent SSB emission is one giving the same audio-frequency signal-to-noise ratio at the receiver output as the corresponding DSB emission, when it is received by a DSB receiver with envelope detection. This is achieved when the sideband power of the SSB emission is 3 dB larger than the total sideband power of the DSB emission. (The peak envelope power of the equivalent SSB emission and the carrier power are the same as that of the DSB emission.)

(b) *Emission characteristics*—(1) *Nominal carrier frequencies.* Nominal carrier frequencies shall be integral multiples of 5 kHz.

(2) *Frequency tolerance.* The frequency tolerance shall be 10 Hz.

NOTE 1 TO PARAGRAPH (b)(2): The ITU suggests that administrations avoid carrier frequency differences of a few hertz, which cause degradations similar to periodic fading. This could be avoided if the frequency tolerance were 0.1 Hz, a tolerance which would be suitable for SSB emissions.

NOTE 2 TO PARAGRAPH (b)(2): The SSB system adopted for the bands allocated exclusively to HF broadcasting does not require a frequency tolerance less than 10 Hz. The degradation mentioned in Note 1 occurs when the ratio of wanted-to-interfering signal is well below the required protection ratio. This remark is equally valid for both DSB and SSB emissions.

(3) *Audio-frequency band.* The upper limit of the audio-frequency band (at—3 dB) of the transmitter shall not exceed 4.5 kHz with a further slope of attenuation of 35 dB/kHz and the lower limit shall be 150 Hz with lower frequencies attenuated at a slope of 6 dB per octave.

(4) *Modulation processing.* If audio-frequency signal processing is used, the dynamic range of the modulating signal shall be not less than 20 dB.

(5) *Necessary bandwidth.* The necessary bandwidth shall not exceed 4.5 kHz.

(6) *Carrier reduction (relative to peak envelope power).* In a mixed DSB, SSB and digital environment, the carrier reduction shall be 6 dB to allow SSB emissions to be received by conventional DSB receivers with envelope detection without significant deterioration of the reception quality.

(7) *Sideband to be emitted.* Only the upper sideband shall be used.

(8) *Attenuation of the unwanted sideband.* The attenuation of the unwanted sideband (lower sideband) and of intermodulation products in that part of the emission spectrum shall be at least 35 dB relative to the wanted sideband signal level. However, since there is in practice a large difference between signal amplitudes in adjacent channels, a greater attenuation is recommended.

[70 FR 46677, Aug. 10, 2005]

§ 73.758 System specifications for digitally modulated emissions in the HF broadcasting service.

(a) For digitally modulated emissions, the Digital Radio Mondiale (DRM) standard shall be employed. Both digital audio broadcasting and datacasting are authorized. The RF requirements for the DRM system are specified in paragraphs (b) and (c), of this section.