

**Federal Communications Commission**

**§ 73.37**

candidate allotment and the established allotment are within the same priority group. [58 FR 27949, May 12, 1993]

**§ 73.31 Rounding of nominal power specified on applications.**

(a) An application filed with the FCC for a new station or for an increase in power of an existing station shall specify nominal power rounded to two significant figures as follows:

Nominal power (kW)	Rounded down to nearest figure (kW)
Below 0.25 .....	0.001
0.25 to 0.99 .....	0.01
1 to 9.9 .....	0.1
10 to 50 .....	1

(b) In rounding the nominal power in accordance with paragraph (a) of this section the RMS shall be adjusted accordingly. If rounding upward to the nearest figure would result in objectionable interference, the nominal power specified on the application is to be rounded downward to the next nearest figure and the RMS adjusted accordingly.

[50 FR 18821, May 2, 1985, as amended at 53 FR 1031, Jan. 15, 1988]

**§ 73.33 Antenna systems; showing required.**

(a) An application for authority to install a broadcast antenna shall specify a definite site and include full details of the antenna design and expected performance.

(b) All data necessary to show compliance with the terms and conditions of the construction permit must be filed with the license application. If the station is using a directional antenna, a proof of performance must also be filed.

[28 FR 13574, Dec. 14, 1963, as amended at 37 FR 25840, Dec. 5, 1972]

**§ 73.35 Calculation of improvement factors.**

A petition for an allotment (See § 73.30) in the 1605–1705 kHz band filed by an existing fulltime AM station licensed in the 535–1605 kHz band will be ranked according to the station's calculated improvement factor. (See

§ 73.30). Improvement factors relate to both nighttime and daytime interference conditions and are based on two distinct considerations: (a) Service area lost by other stations due to interference caused by the subject station, and (b) service area of the subject station. These considerations are represented by a ratio. The ratio consists, where applicable, of two separate additive components, one for nighttime and one for daytime. For the nighttime component, to determine the numerator of the ratio (first consideration), calculate the RSS and associated service area of the stations (co- and adjacent channel) to which the subject station causes nighttime interference. Next, repeat the RSS and service area calculations excluding the subject station. The cumulative gain in the above service area is the numerator of the ratio. The denominator (second consideration) is the subject station's interference-free service area. For the daytime component, the composite amount of service lost by co-channel and adjacent channel stations, each taken individually, that are affected by the subject station, excluding the effects of other assignments during each study, will be used as the numerator of the daytime improvement factor. The denominator will consist of the actual daytime service area (0.5 mV/m contour) less any area lost to interference from other assignments. The value of this combined ratio will constitute the petitioner's improvement factor. Notwithstanding the requirements of § 73.153, for uniform comparisons and simplicity, measurement data will not be used for determining improvement factors and FCC figure M-3 ground conductivity values are to be used exclusively in accordance with the pertinent provisions of § 73.183(c)(1).

[56 FR 64858, Dec. 12, 1991]

**§ 73.37 Applications for broadcast facilities, showing required.**

(a) No application will be accepted for a new station if the proposed operation would involve overlap of signal strength contours with any other station as set forth below in this paragraph; and no application will be accepted for a change of the facilities of an existing station if the proposed

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change would involve such overlap where there is not already such overlap between the stations involved:

Frequency separation (kHz)	Contour of proposed station (classes B, C and D) (mV/m)	Contour of any other station (mV/m)
0 .....	0.005 0.025 0.500	0.100 (Class A). 0.500 (Other classes). 0.025 (All classes).
10 .....	0.250 0.500	0.500 (All classes). 0.250 (All classes).
20 .....	5 5	5 (All classes). 5 (All classes).
30 .....	25	25 (All classes).

(b) In determining overlap received, an application for a new Class C station with daytime power of 250 watts, or greater, shall be considered on the assumption that both the proposed operation and all existing Class C stations operate with 250 watts and utilize non-directional antennas.

(c) If otherwise consistent with the public interest, an application requesting an increase in the daytime power of an existing Class C station on a local channel from 250 watts to a maximum of 1kW, or from 100 watts to a maximum of 500 watts, may be granted notwithstanding overlap prohibited by paragraph (a) of this section. In the case of a 100 watt Class C station increasing daytime power, the provisions of this paragraph shall not be construed to permit an increase in power to more than 500 watts, if prohibited overlap would be involved, even if successive applications should be tendered.

(d) In addition to demonstrating compliance with paragraphs (a), and, as appropriate, (b), and (c) of this section, an application for a new AM broadcast station, or for a major change (see § 73.3571(a)(1)) in an authorized AM broadcast station, as a condition for its acceptance, shall make a satisfactory showing, if new or modified nighttime operation by a Class B station is proposed, that objectionable interference will not result to an authorized station, as determined pursuant to § 73.182(1).

(e) An application for an authorization in the 1605–1705 kHz band which has been selected through the petition process (See § 73.30) is not required to

demonstrate compliance with paragraph (a), (b), (c), or (d) of this section. Instead, the applicant need only comply with the terms of the allotment authorization issued by the Commission in response to the earlier petition for establishment of a station in the 1605–1705 kHz band. Within the allotment authorization, the Commission will specify the assigned frequency and the applicable technical requirements.

(f) Stations on 1580, 1590 and 1600 kHz. In addition to the rules governing the authorization of facilities in the 535–1605 kHz band, stations on these frequencies seeking facilities modifications must protect assignments in the 1610–1700 kHz band. Such protection shall be afforded in a manner which considers the spacings that occur or exist between the subject station and a station within the range 1605–1700 kHz. The spacings are the same as those specified for stations in the frequency band 1610–1700 kHz or the current separation distance, whichever is greater. Modifications that would result in a spacing or spacings that fails to meet any of the separations must include a showing that appropriate adjustment has been made to the radiated signal which effectively results in a site-to-site radiation that is equivalent to the radiation of a station with standard Model I facilities (10 kW-D, 1 kW-N, non-DA, 90 degree antenna ht. & ground system) operating in compliance with all of the above separation distances. In those cases where that radiation equivalence value is already exceeded, a station may continue to maintain, but not increase beyond that level.

NOTE 1: In the case of applications for changes in the facilities of AM broadcast stations covered by this section, an application will be accepted even though overlap of field strength contours as mentioned in this section would occur with another station in an area where such overlap does not already exist, if:

- (1) The total area of overlap with that station would not be increased;
- (2) There would be no net increase in the area of overlap with any other station; and
- (3) There would be created no area of overlap with any station with which overlap does not now exist.

NOTE 2: The provisions of this section concerning prohibited overlap of field strength contours will not apply where:

(1) The area of overlap lies entirely over sea water: or

(2) The only overlap involved would be that caused to a foreign station, in which case the provisions of the applicable international agreement, as identified in §73.1650, will apply. When overlap would be received from a foreign station, the provisions of this section will apply, except where there would be overlap with a foreign station with a frequency separation of 20 kHz, in which case the provisions of the international agreement will apply in lieu of this section.

NOTE 3: In determining the number of "authorized" aural transmission facilities in a given community, applications for that community in hearing or otherwise having protected status under specified "cut-off" procedures shall be considered as existing stations. In the event that there are two or more mutually exclusive protected applications seeking authorization for the proposed community it will be assumed that only one is "authorized."

NOTE 4: A "transmission facility" for a community is a station licensed to the community. Such a station provides a "transmission service" for that community.

[56 FR 64858, Dec. 12, 1991; 57 FR 43290, Sept. 18, 1992]

#### § 73.44 AM transmission system emission limitations.

(a) The emissions of stations in the AM service shall be attenuated in accordance with the requirements specified in paragraph (b) of this section. Emissions shall be measured using a properly operated and suitable swept-frequency RF spectrum analyzer using a peak hold duration of 10 minutes, no video filtering, and a 300 Hz resolution bandwidth, except that a wider resolution bandwidth may be employed above 11.5 kHz to detect transient emissions. Alternatively, other specialized receivers or monitors with appropriate characteristics may be used to determine compliance with the provisions of this section, provided that any disputes over measurement accuracy are resolved in favor of measurements obtained by using a calibrated spectrum analyzer adjusted as set forth above.

(b) Emissions 10.2 kHz to 20 kHz removed from the carrier must be attenuated at least 25 dB below the unmodulated carrier level, emissions 20 kHz to 30 kHz removed from the carrier must be attenuated at least 35 dB below the unmodulated carrier level, emissions 30 kHz to 60 kHz removed

from the carrier must be attenuated at least  $[5 + 1 \text{ dB/kHz}]$  below the unmodulated carrier level, and emissions between 60 kHz and 75 kHz of the carrier frequency must be attenuated at least 65 dB below the unmodulated carrier level. Emissions removed by more than 75 kHz must be attenuated at least  $43 + 10 \text{ Log (Power in watts)}$  or 80 dB below the unmodulated carrier level, whichever is the lesser attenuation, except for transmitters having power less than 158 watts, where the attenuation must be at least 65 dB below carrier level.

(c) Should harmful interference be caused to the reception of other broadcast or non-broadcast stations by out of band emissions, the licensee may be directed to achieve a greater degree of attenuation than specified in paragraphs (a) and (b) of this section.

(d) Measurements to determine compliance with this section for transmitter type acceptance are to be made using signals sampled at the output terminals of the transmitter when operating into an artificial antenna of substantially zero reactance. Measurements made of the emissions of an operating station are to be made at ground level approximately 1 kilometer from the center of the antenna system. When a directional antenna is used, the carrier frequency reference field strength to be used in order of preference shall be:

(1) The measure non-directional field strength.

(2) The RMS field strength determined from the measured directional radiation pattern.

(3) The calculated expected field strength that would be radiated by a non-directional antenna at the station authorized power.

(e) Licensees of stations complying with the ANSI/EIA-549-1988, NRSC-1 AM Preemphasis/Deemphasis and Broadcast Transmission Bandwidth Specifications (NRSC-1), prior to June 30, 1990 or from the original commencement of operation will, until June 30, 1994, be considered to comply with paragraphs (a) and (b) of this section, absent any reason for the Commission to believe otherwise. Such stations are waived from having to make the periodic measurements required in