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(f) Calculate the East-West distance in kilometers as follows:

$$EW = KPD_{lon} \times (LON1_{dd} - LON2_{dd})$$

(g) Calculate the distance between the locations by taking the square root of the sum of the squares of the East-West and North-South distances:

$$DIST = \sqrt{NS^2 + EW^2}$$

(h) Terms used in this section are defined as follows:

(1) $LAT1_{dd}$ and $LON1_{dd}$ are the coordinates of the first location in degree-decimal format.

(2) $LAT2_{dd}$ and $LON2_{dd}$ are the coordinates of the second location in degree-decimal format.

(3) ML is the mean geodetic latitude in degree-decimal format.

(4) KPD_{lat} is the number of kilometers per degree of latitude at a given mean geodetic latitude.

(5) KPD_{lon} is the number of kilometers per degree of longitude at a given mean geodetic latitude.

(6) NS is the North-South distance in kilometers.

(7) $DIST$ is the distance between the two locations, in kilometers.

§ 22.159 Computation of average terrain elevation.

Average terrain elevation must be calculated by computer using elevations from a 30 second point or better topographic data file. The file must be identified. If a 30 second point data file is used, the elevation data must be processed for intermediate points using interpolation techniques; otherwise, the nearest point may be used. In cases of dispute, average terrain elevation determinations can also be done manually, if the results differ significantly from the computer derived averages.

(a) Radial average terrain elevation is calculated as the average of the elevation along a straight line path from 3 to 16 kilometers (2 and 10 miles) extending radially from the antenna site. If a portion of the radial path extends over foreign territory or water, such portion must not be included in the computation of average elevation unless the radial path again passes over United States land between 16 and 134 kilometers (10 and 83 miles) away from

the station. At least 50 evenly spaced data points for each radial should be used in the computation.

(b) Average terrain elevation is the average of the eight radial average terrain elevations (for the eight cardinal radials).

(c) For locations in Dade and Broward Counties, Florida, the method prescribed above may be used or average terrain elevation may be assumed to be 3 meters (10 feet).

§ 22.161 Application requirements for ASSB.

Applications for base stations employing amplitude companded single sideband modulation (ASSB) must contain the following information:

(a) The application must describe fully the modulation characteristics, emission and occupied bandwidth, and specify the center frequency of the emission for each channel, carrier frequency, and pilot channels, if any. The emission must fall completely within a channel assignable for two-way operation in the Paging and Radiotelephone Service, Rural Radiotelephone Service or Offshore Radiotelephone Service.

(b) The application must contain interference studies between stations within an authorized bandwidth, whether FM-to-ASSB, ASSB-to-FM, or ASSB-to-ASSB in accordance with the following: For ASSB stations, the transmitter nearest to the protected station must be used. The effective radiated power in the direction of the protected station must be the sum of the peak effective radiated power of all transmitters in the group, in the direction of the protected station. The antenna center of radiation height above average terrain must be the highest antenna center of radiation height of any transmitter in the group in the direction of the protected station. The channel of the group is assumed to be the same as that of the protected station (co-channel), and studies must be made in accordance with § 22.567.

§ 22.165 Additional transmitters for existing systems.

A licensee may operate additional transmitters at additional locations on the same channel or channel block as

its existing system without obtaining prior Commission approval provided:

(a) *International coordination.* The locations and/or technical parameters of the additional transmitters are such that individual coordination of the channel assignment(s) with a foreign administration, under applicable international agreements and rules in this part, is not required.

(b) *Antenna structure registration.* Certain antenna structures must be registered with the Commission prior to construction or alteration. Registration requirements are contained in part 17 of this chapter.

(c) *Environmental.* The additional transmitters must not have a significant environmental effect as defined by §§ 1.1301 through 1.1319 of this chapter.

(d) *Paging and Radiotelephone Service.* The provisions in this paragraph apply for stations in the Paging and Radiotelephone Service.

(1) The interfering contours of the additional transmitter(s) must be totally encompassed by the composite interfering contour of the existing station (or stations under common control of the applicant) on the same channel, except that this limitation does not apply to nationwide network paging stations or in-building radiation systems.

(2) Additional transmitters in the 43 MHz frequency range operate under developmental authority, subject to the conditions set forth in § 22.411.

(3) The additional transmitters must not operate on control channels in the 72–76 MHz, 470–512 MHz, 928 MHz, 932 MHz, 941 MHz or 959 MHz frequency ranges.

(e) *Cellular radiotelephone service.* During the five-year build-out period, the service area boundaries of the additional transmitters, as calculated by the method set forth in § 22.911(a), must remain within the market, except that the service area boundaries may extend beyond the market boundary into the area that is part of the CGSA or is already encompassed by the service area boundaries of previously authorized facilities. After the five-year build-out period, the service area boundaries of the additional transmitters, as calculated by the method set forth in § 22.911(a), must remain within the

CGSA. Licensees must notify the Commission (FCC Form 601) of any transmitters added under this section that cause a change in the CGSA boundary. The notification must include full size and reduced maps, and supporting engineering, as described in § 22.953(a)(5)(i) through (iii). If the addition of transmitters involves a contract service area boundary (SAB) extension (see § 22.912), the notification must include a statement as to whether the five-year build-out period for the system on the relevant channel block in the market into which the SAB extends has elapsed and whether the SAB extends into any unserved area in the market. The notification must be made electronically via the ULS, or delivered to the filing place (see § 1.913 of this chapter) no later than 15 days after the addition is made.

(f) *Air-ground Radiotelephone Service.* Ground stations may be added to Commercial Aviation air-ground systems at previously established ground station locations, pursuant to § 22.859, subject to compliance with the applicable technical rules. This section does not apply to General Aviation air-ground stations.

(g) *Rural Radiotelephone Service.* A “service area” and “interfering contours” must be determined using the same method as for stations in the Paging and Radiotelephone Service. The service area and interfering contours so determined for the additional transmitter(s) must be totally encompassed by the similarly determined composite service area contour and predicted interfering contour, respectively, of the existing station on the same channel. This section does not apply to Basic Exchange Telecommunications Radio Systems.

(h) *Offshore Radiotelephone Service.* This section does not apply to stations in the Offshore Radiotelephone Service.

(i) *Provision of information upon request.* Upon request by the FCC, licensees must supply administrative or technical information concerning the additional transmitters. At the time transmitters are added pursuant to this section, licensees must make a record of the pertinent technical and administrative information so that

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such information is readily available. See § 22.303.

[59 FR 59507, Nov. 17, 1994; 59 FR 64856, Dec. 16, 1994; as amended at 62 FR 11629, Mar. 12, 1997; 63 FR 68944, Dec. 14, 1998; 64 FR 53240, Oct. 1, 1999]

§ 22.169 International coordination of channel assignments.

Channel assignments under this part are subject to the applicable provisions and requirements of treaties and other international agreements between the United States government and the governments of Canada and Mexico.

COMPETITIVE BIDDING PROCEDURES

SOURCE: 62 FR 11629, Mar. 12, 1997, unless otherwise noted.

§ 22.201 Scope of competitive bidding rules.

Sections 22.201 through 22.227, inclusive (and, unless otherwise specified in this part, the procedures set forth in part 1, subpart Q, of this chapter), apply only to competitive bidding ("auction") procedures for authorizations as follows:

(a) Paging geographic area authorizations issued pursuant to this part or to part 90 of this chapter.

(b) [Reserved].

§ 22.203 Competitive bidding design for paging licensing.

A simultaneous multiple round auction will be used to choose from among mutually exclusive initial applications for paging geographic area authorizations, unless the FCC specifies otherwise by Public Notice prior to the competitive bidding procedure.

§ 22.205 Competitive bidding mechanisms.

(a) *Sequencing*. The FCC will establish and may vary the sequence in which paging geographic area authorizations are auctioned.

(b) *Grouping*. The FCC will determine which licenses will be auctioned simultaneously or in combination based on interdependency and administrative circumstances.

(c) *Minimum Bid Increments*. The FCC may, by public announcement before or during an auction, require minimum

bid increments in dollar or percentage terms.

(d) *Stopping Rules*. The FCC may establish stopping rules before or during an auction in order to terminate the auction within a reasonable time.

(e) *Activity Rules*. The FCC may establish activity rules which require a minimum amount of bidding activity. In the event that the FCC establishes an activity rule in connection with a simultaneous multiple round auction, each bidder may request waivers of such rule during the auction. The FCC may, by public announcement either before or during an auction, specify or vary the number of waivers available to each bidder.

§ 22.207 Withdrawal, default, and disqualification payments.

The FCC will impose payments on bidders who withdraw high bids during the course of an auction, who default on payments due after an auction terminates, or who are disqualified. When the FCC conducts a simultaneous multiple round auction, payments will be calculated as set forth in §§ 1.2104(g) and 1.2109 of this chapter. When the amount of such a payment cannot be determined, a deposit of up to 20 percent of the amount bid on the license will be required.

§ 22.209 Bidding applications (FCC Form 175 and 175-S Short-form).

Each applicant to participate in competitive bidding for paging geographic area authorizations must submit an application (FCC Forms 175 and 175-S) pursuant to the provisions of § 1.2105 of this chapter.

§ 22.211 Submission of upfront payments and down payments.

(a) The FCC will require applicants to submit an upfront payment prior to the start of a paging auction. The amount of the upfront payment for each geographic area license auctioned and the procedures for submitting it will be set forth by the Wireless Telecommunications Bureau in a Public Notice in accordance with § 1.2106 of this chapter.

(b) Each winning bidder in a paging auction must submit a down payment to the FCC in an amount sufficient to