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Building Height and Building Penetration Factors. The building height correction, BH, is a function of the average building height within the nominal coverage area of the base station. It is used in conjunction with the building penetration loss, BP, to adjust the expected interference contribution from that portion of the portables transmitting from within buildings. The adjustment is given by:

BP=20 dB in urban areas
BP=10 dB in suburban areas
BH=2.5×(nf–1) dB

where nf is the average height (number of floors) of the buildings in the area.

(Note that this formula implies a net gain when the average building height is greater than 8 floors). All buildings more than twice the average height should be considered individually. The contribution to BH from that portion of portables in the building above the average building height should be increased by a factor of 20Log(h) dB, where h is the height of the portables above the average building height in meters.

Channel Discrimination Factor. A factor based on the interference selectivity of the microwave receiver.

Propagation Model. The PCS to microwave path loss, L, is calculated using the Longley-Rice propagation model, Version 1.2.2., in the point-to-point mode. The Longley-Rice [1] model was derived from NBS Technical Note 101 [2], and updated in 1982 by Hufford [3]. Version 1.2.2 incorporated modifications described in a letter by Hufford [4] in 1985. Terrain elevations used as input to the model should be from the U.S. Geological Survey 3-second digitized terrain database.

Special Situations. If a cell size is large compared to the distance between the cell and a microwave receiving site so that it subtends an angle greater than 5 degrees, the cell should be subdivided and calculations should be based on the expected distribution of mobiles and portables within each subdivision.

If terrain elevations within a cell differ by more than a factor of two-to-one, the cell should be subdivided and microwave interference calculations should be based on the average terrain elevation for each subdivision.

If a co-channel PCS base station lies within the main beam of a microwave antenna (±5 degrees), there is no intervening terrain obstructions, and the power at the microwave receiver from that base station, assuming free space propagation, would be 3 dB or less below the interference threshold, interference will be assumed to exist unless the PCS licensee can demonstrate otherwise by specific path loss calculations based on terrain and building losses.

If any part of a cell or cell subdivision lies within the main beam of a co-channel microwave antenna, there is no intervening terrain obstructions, and the accumulative power of 5 percent or less of the mobiles, assuming free space propagation would be 3 dB or less below the interference threshold, interference will be assumed to exist unless the PCS licensee can demonstrate otherwise by specific path loss calculations based on terrain and building losses.

If a building within a cell or cell subdivision lies within the main beam of a co-channel microwave antenna, there is no intervening terrain obstructions, and the cumulative power of 5 percent or fewer of the portables, assuming free space propagation, would be 3 dB or less below the interference threshold, interference will be assumed to exist unless the PCS licensee can demonstrate otherwise by specific path loss calculations based on terrain and building losses.

REFERENCES:

1. Longley, A.G. and Rice, P.L., ''Prediction of Tropospheric Radio Transmission Loss Over Irregular Terrain, A Computer Method-1968'', ESSA Technical Report ERL 79–ITS 67, Institute for Telecommunications Sciences, July 1968.

2. Rice, P.L. Longley, A.G., Norton, K.A., Barsis, A.P., ''Transmission Loss Predictions for Tropospheric Communications Circuits,'' NBS Technical Note 101 (Revised), Volumes I and II, U.S. Department of Commerce, 1967.

3. Hufford, G.A., Longley, A.G. and Kissick, W.A., ''A Guide to the use of the ITS Irregular Terrain Model in the Area Prediction Mode'', NTIA Report 82–100, U.S. Department of Commerce, April 1982. Also, Circular letter, dated January 30, 1985, from G.A. Hufford, identifying modifications to the computer program.

4. Hufford, G.A., Memorandum to Users of the ITS Irregular Terrain Model, Institute for Telecommunications Sciences, U.S. Department of Commerce, January 30, 1985.

Subpart F—Competitive Bidding Procedures for Narrowband PCS

SOURCE: 59 FR 26747, May 24, 1994, unless otherwise noted.

§ 24.301 Narrowband PCS subject to competitive bidding.

Mutually exclusive initial applications for narrowband PCS service licenses are subject to competitive bidding. The general competitive bidding procedures set forth in part 1, subpart Q of this chapter will apply unless otherwise provided in this subpart.

[67 FR 45367, July 9, 2002]

§ 24.302–24.309 [Reserved]

§ 24.320 [Reserved]

§ 24.321 Designated entities.

(a) *Eligibility for small business provisions.* (1) A small business is an entity that, together with its controlling interests and affiliates, has average gross revenues not exceeding $ 40 million for the preceding three years.

(2) A very small business is an entity that, together with its controlling interests and affiliates, has average gross revenues not exceeding $ 15 million for the preceding three years.

(b) *Bidding credits.* After August 7, 2000, a winning bidder that qualifies as a small business, as defined in this section, or a consortium of small businesses may use the bidding credit specified in §1.2110(f)(2)(iii) of this chapter. A winning bidder that qualifies as a very small business, as defined in this section, or a consortium of very small businesses may use the bidding credit specified in §1.2110(f)(2)(ii) of this chapter.

(c) *Installment payments.* Small businesses that are winning bidders on any regional license prior to August 7, 2000 will be eligible to pay the full amount of their winning bids in installments over the term of the license pursuant to the terms set forth in §1.2110(g) of this chapter.

[67 FR 45367, July 9, 2002, as amended at 68 FR 42998, July 21, 2003]

Subpart G—Interim Application, Licensing and Processing Rules for Narrowband PCS

SOURCE: 59 FR 26749, May 24, 1994, unless otherwise noted.

§ 24.403 Authorization required.

No person shall use or operate any device for the transmission of energy or communications by radio in the services authorized by this part except as provided in this part.

§ 24.404 Eligibility.

(a) *General.* Authorizations will be granted upon proper application if:

(1) The applicant is qualified under the applicable laws and the regulations, policies and decisions issued under the laws, including §24.12;

(2) There are frequencies available to provide satisfactory service; and

(3) The public interest, convenience or necessity would be served by a grant.

(b) *Alien ownership.* A narrowband PCS authorization to provide Commercial Mobile Radio Service may not be granted to or held by:

(1) Any alien or the representative of any alien.

(2) Any corporation organized under the laws of any foreign government.

(3) Any corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or any corporation organized under the laws of a foreign country.

(4) Any corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned or voted by aliens, their representatives, or by a foreign government or representative thereof, or by any corporation organized under the laws of a foreign country, if the Commission finds that the public interest will be served by the refusal or revocation of such license. A Narrowband PCS authorization to provide Private Mobile Radio Service may not be granted to or held by a foreign government or a representative thereof.

[59 FR 26749, May 24, 1994, as amended at 61 FR 55581, Oct. 28, 1996; 65 FR 35855, June 6, 2000]

§§ 24.405–24.414 [Reserved]

§ 24.415 Technical content of applications; maintenance of list of station locations.

(a) All applications required by this part shall contain all technical information required by the application forms or associated public notice(s). Applications other than initial applications for a narrowband PCS license must also comply with all technical requirements of the rules governing the narrowband PCS (see subparts C and D as appropriate). The following paragraphs describe a number of general technical requirements.