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AUTHORITY: 47 U.S.C. 154, 301, 302, 303, 309 and 332.

SOURCE: 58 FR 59183, Nov. 8, 1993, unless otherwise noted. Redesignated at 59 FR 18499, Apr. 19, 1994.

### Subpart A—General Information

#### § 24.1 Basis and purpose.

This section contains the statutory basis for this part of the rules and provides the purpose for which this part is issued.

(a) *Basis.* The rules for the personal communications services (PCS) in this

part are promulgated under the provisions of the Communications Act of 1934, as amended, that vests authority in the Federal Communications Commission to regulate radio transmission and to issue licenses for radio stations.

(b) *Purpose.* This part states the conditions under which portions of the radio spectrum are made available and licensed for PCS.

(c) *Scope.* The rules in this part apply only to stations authorized under this part. Rules in subparts D and E apply only to stations authorized under those subparts.

[58 FR 59183, Nov. 8, 1993. Redesignated at 59 FR 18499, Apr. 19, 1994, and amended at 59 FR 32854, June 24, 1994]

#### § 24.2 Other applicable rule parts.

Other FCC rule parts applicable to licensees in the personal communications services include the following:

(a) *Part 0.* This part describes the Commission's organization and delegations of authority. Part 0 of this chapter also lists available Commission publications, standards and procedures for access to Commission records, and location of Commission Field Offices.

(b) *Part 1.* This part includes rules of practice and procedure for license applications, adjudicatory proceedings, procedures for reconsideration and review of the Commission's actions; provisions concerning violation notices and forfeiture proceedings; and the environmental requirements that, if applicable, must be complied with prior to the initiation of construction.

(c) *Part 2.* This part contains the Table of Frequency Allocations and special requirements in international regulations, recommendations, agreements, and treaties. This part also contains standards and procedures concerning the marketing and importation of radio frequency devices, and for obtaining equipment authorization.

(d) *Part 5.* This part contains rules prescribing the manner in which parts of the radio frequency spectrum may be made available for experimentation.

(e) *Part 15.* This part contains rules setting out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications,

administrative requirements and other conditions relating to the marketing of part 15 devices. Unlicensed PCS devices operate under subpart D of part 15.

(f) *Part 17.* This part contains requirements for construction, marking and lighting of antenna towers.

(g) Part 20 of this chapter governs commercial mobile radio services.

(h) *Part 21.* This part contains rules concerning point-to-point microwave service authority relating to communications common carriers.

(i) *Part 68.* This part contains technical standards for connection of terminal equipment to the telephone network.

(j) *Part 94.* This part contains rules concerning the private microwave service relating to point-to-point communication requirements.

[58 FR 59183, Nov. 8, 1993. Redesignated and amended at 59 FR 18499, Apr. 19, 1994]

#### § 24.3 Permissible communications.

PCS licensees may provide any mobile communications service on their assigned spectrum. Fixed services may be provided on a co-primary basis with mobile operations. Broadcasting as defined in the Communications Act is prohibited.

[61 FR 45356, Aug. 29, 1996]

EFFECTIVE DATE NOTE: At 61 FR 45356, Aug. 29, 1996, § 24.3 was revised, effective Oct. 28, 1996. For the convenience of the reader the superseded text is set forth as follows:

#### § 24.3 Permissible communications.

PCS licensees may provide any mobile communications service on their assigned spectrum. Fixed services may be provided only if ancillary to mobile operations. Broadcasting as defined in the Communications Act is prohibited.

[59 FR 32854, June 24, 1994]

#### § 24.5 Terms and definitions.

*Assigned Frequency.* The center of the frequency band assigned to a station.

*Authorized Bandwidth.* The maximum width of the band of frequencies permitted to be used by a station. This is normally considered to be the necessary or occupied bandwidth, whichever is greater.

*Average Terrain.* The average elevation of terrain between 3 and 16 kilometers from the antenna site.

*Base Station.* A land station in the land mobile service.

*Broadband PCS.* PCS services operating in the 1850–1890 MHz, 1930–1970 MHz, 2130–2150 MHz, and 2180–2200 MHz bands.

*Effective Radiated Power (e.r.p.) (in a given direction).* The product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction.

*Equivalent Isotropically Radiated Power (e.i.r.p.).* The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

*Fixed Service.* A radiocommunication service between specified fixed points.

*Fixed Station.* A station in the fixed service.

*Land Mobile Service.* A mobile service between base stations and land mobile stations, or between land mobile stations.

*Land Mobile Station.* A mobile station in the land mobile service capable of surface movement within the geographic limits of a country or continent.

*Land Station.* A station in the mobile service not intended to be used while in motion.

*Mobile Service.* A radiocommunication service between mobile and land stations, or between mobile stations.

*Mobile Station.* A station in the mobile service intended to be used while in motion or during halts at unspecified points.

*Narrowband PCS.* PCS services operating in the 901–902 MHz, 930–931 MHz, and 940–941 MHz bands.

*National Geodetic Reference System (NGRS):* The name given to all geodetic control data contained in the National Geodetic Survey (NGS) data base. (Source: National Geodetic Survey, U.S. Department of Commerce)

*PCS Relocator.* A PCS entity that pays to relocate a fixed microwave link from its existing 2 GHz facility to other media or other fixed channels.

*Personal Communications Services (PCS).* Radio communications that encompass mobile and ancillary fixed communication that provide services to individuals and businesses and can be integrated with a variety of competing networks.

*UTAM.* The Unlicensed PCS Ad Hoc Committee for 2 GHz Microwave Transition and Management, which coordinates relocation in the 1910–1930 MHz band.

[58 FR 59183, Nov. 8, 1993. Redesignated at 59 FR 18499, Apr. 19, 1994, and amended at 61 FR 29691, June 12, 1996]

## Subpart B—Applications and Licenses

### GENERAL FILING REQUIREMENTS

#### § 24.10 Scope.

This subpart contains some of the procedures and requirements for filing applications for licenses in the personal communications services. One also should consult subparts F and G of this part. Other Commission rule parts of importance that may be referred to with respect to licensing and operation of radio services governed under this part include 47 CFR parts 0, 1, 2, 5, 15, 17 and 20.

[59 FR 32854, June 24, 1994]

#### § 24.11 Initial authorization.

(a) An applicant must file an application for an initial authorization in each market and frequency block desired.

(b) Blanket licenses are granted for each market and frequency block. Applications for individual sites are not required and will not be accepted.

[59 FR 32854, June 24, 1994]

#### § 24.12 Eligibility.

Any entity, other than those precluded by section 310 of the Communications Act of 1934, as amended, 47 U.S.C. 310, or §§ 99.202(c) or 99.204, is eligible to hold a license under this part.

[58 FR 59183, Nov. 8, 1993; 59 FR 15269, Mar. 31, 1994]

#### § 24.15 License period.

Licenses for service areas will be granted for ten year terms from the date of original issuance or renewal.

#### § 24.16 Criteria for comparative renewal proceedings.

A renewal applicant involved in a comparative renewal proceeding shall

receive a preference, commonly referred to as a renewal expectancy, which is the most important comparative factor to be considered in the proceeding, if its past record for the relevant license period demonstrates that the renewal applicant:

(a) Has provided “substantial” service during its past license term. “Substantial” service is defined as service which is sound, favorable, and substantially above a level of mediocre service which might just minimally warrant renewal; and

(b) Has substantially complied with applicable Commission rules, policies and the Communications Act.

### Subpart C—Technical Standards

#### §24.50 Scope.

This subpart sets forth the technical requirements for use of the spectrum and equipment in the personal communications services.

#### §24.51 Equipment authorization.

(a) Each transmitter utilized for operation under this part and each transmitter marketed, as set forth in §2.803 of this chapter, must be of a type that has been authorized by the Commission under its type acceptance procedure for use under this part.

(b) The Commission periodically publishes a list of type accepted equipment, entitled “Radio Equipment List, Equipment Accepted for Licensing.” Copies of this list are available for public reference at the Commission’s offices in Washington, DC, at each of its field offices, and may be ordered from its copy contractor.

(c) Any manufacturer of radio transmitting equipment to be used in these services may request equipment authorization following the procedures set forth in subpart J of part 2 of this chapter. Equipment authorization for an individual transmitter may be requested by an applicant for a station authorization by following the procedures set forth in part 2 of this chapter. Such equipment if approved or accepted will not normally be included in the Commission’s Radio Equipment List but will be individually enumerated on the station authorization.

(d) Applicants for type acceptance of transmitters that operate in these services must determine that the equipment complies with IEEE C95.1-1991, “IEEE Standards for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz” as measured using methods specified in IEEE C95.3-1991, “Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields—RF and Microwave.” The applicant for type acceptance is required to submit a statement affirming that the equipment complies with these standards as measured by an approved method and to maintain a record showing the basis for the statement of compliance with IEEE C.95.1-1991.

#### §24.52 RF hazards.

Licensees and manufacturers are subject to the radiofrequency radiation exposure requirements specified in §1.1307(b), §2.1091 and §2.1093 of this chapter, as appropriate. Applications for equipment authorization of mobile or portable devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.

[61 FR 41018, Aug. 7, 1996]

#### §24.53 Calculation of height above average terrain (HAAT).

(a) HAAT is determined by subtracting average terrain elevation from antenna height above mean sea level.

(b) Average terrain elevation shall be calculated using elevation data from a 30 arc second or better Digital Elevation Models (DEMs). DEM data is available from United States Geological Survey (USGS). The data file shall be identified. If 30 arc second data is used, the elevation data must be processed for intermediate points using interpolation techniques; otherwise, the nearest point may be used. If DEM data is not available, elevation data from the Defense Mapping Agency’s Digital Chart of the World (DCW) may be used.

(c) Radial average terrain elevation is calculated as the average of the elevation along a straight line path from 3 to 16 kilometers extending radially from the antenna site. At least 50 evenly spaced data points for each radial shall be used in the computation.

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

(e) The position location of the antenna site shall be determined to an accuracy of no less than ±5 meters in both the horizontal (latitude and longitude) and vertical (ground elevation) dimensions with respect to the National Geodetic Reference System.

[58 FR 59183, Nov. 8, 1993; 59 FR 15269, Mar. 31, 1994]

**§ 24.55 Antenna structures; air navigation safety.**

Licensees that own their antenna structures must not allow these antenna structures to become a hazard to air navigation. In general, antenna structure owners are responsible for registering antenna structures with the FCC if required by part 17 of this chapter, and for installing and maintaining any required marking and lighting. However, in the event of default of this responsibility by an antenna structure owner, each FCC permittee or licensee authorized to use an affected antenna structure will be held responsible by the FCC for ensuring that the antenna structure continues to meet the requirements of part 17 of this chapter. See § 17.6 of this chapter.

(a) *Marking and lighting.* Antenna structures must be marked, lighted and maintained in accordance with part 17 of this chapter and all applicable rules and requirements of the Federal Aviation Administration.

(b) *Maintenance contracts.* Antenna structure owners (or licensees and permittees, in the event of default by an antenna structure owner) may enter into contracts with other entities to monitor and carry out necessary maintenance of antenna structures. Antenna structure owners (or licensees and permittees, in the event of default by an antenna structure owner) that make such contractual arrangements continue to be responsible for the

maintenance of antenna structures in regard to air navigation safety.

[61 FR 4366, Feb. 6, 1996]

**Subpart D—Narrowband PCS**

**§ 24.100 Scope.**

This subpart sets out the regulations governing the licensing and operations of personal communications services authorized in the 901–902, 930–931, and 940–941 MHz bands (900 MHz band).

**§ 24.101 Multiple ownership restrictions.**

(a) Narrowband PCS licensees shall not have an ownership interest in more than three of the 26 channels listed in § 24.129 in any geographic area. For purposes of this restriction, a narrowband PCS licensee is:

(1) Any institutional investor, as defined in § 24.720(h), with an ownership interest of ten or more percent in a narrowband PCS license; and

(2) Any other person or entity with an ownership interest of five or more percent in a narrowband PCS license.

(b) In cases where a party applies for a license after August 16, 1994 or has a license transferred to it after that date, and the party has indirect ownership, through an interest in an intervening entity (or entities) that has ownership in the narrowband license, that indirect ownership shall be attributable if the percentages of ownership at each level, multiplied together, equal five or more percent ownership of the narrowband PCS license, except that if the ownership percentage for an interest in any link in the chain exceeds 50 percent or represents actual control, it shall be treated as if it were a 100 percent interest.

Example: Party X has a non-controlling ownership interest of 25 percent in Company Y, which in turn has a non-controlling ownership interest of 10 percent in Company Z, the narrowband PCS licensee. Party X's effective ownership interest in Company Z is Party X's ownership interest in Company Y (25 percent) times Company Y's ownership interest in Company Z (10 percent). Therefore, Party X's effective ownership interest in Company Z is 2.5 percent, and is not attributable.

(c) Notwithstanding paragraph (b) of this section, the following interests

shall not constitute attributable ownership interests for purposes of paragraph (a) of this section:

(1) A limited partnership interest held by an institutional investor (as defined §24.720(h)) where the limited partner is not materially involved, directly or indirectly, in the management or operation of the PCS holdings of the partnership, and the licensee so certifies. The criteria which would assure adequate insulation for the purposes of this certification require:

(i) Prohibiting limited partners from acting as employees of the limited partnership if responsibilities relate to the carrier activities of the licensee;

(ii) Barring the limited partners from serving as independent contractors;

(iii) Restricting communication among limited partners and the general partner regarding day-to-day activities of the licensee;

(iv) Empowering the general partner to veto admissions of new general partners;

(v) Restricting the circumstances in which the limited partners can remove the general partner;

(vi) Prohibiting the limited partners from providing services to the partnership relating to the PCS holdings of the licensee; and

(vii) Stating that the limited partners may not become involved in the management or operation of the licensee. See 47 CFR 73.3555 Note 2(g)(2); Memorandum of Opinion and Order in MM Docket 83-46, FCC 85-252 (released June 24, 1985), as modified on reconsideration in the Memorandum of Opinion and Order in MM Docket No. 83-46, FCC 86-410 (released November 28, 1986).

(2) Institutional investors who held limited partnership interests prior to March 2, 1995 shall be granted one year from that date to amend their limited partnership agreements to comply with the insulation rules and so certify to the Commission. During this transition period, the licensee in which an institutional investor holds an interest shall also certify to the Commission that the institutional investor limited partner(s) are not materially involved, directly or indirectly, in the management or operation of the licensee.

[60 FR 13917, Mar. 15, 1995; 60 FR 26375, May 17, 1995]

#### §24.102 Service areas.

Narrowband PCS service areas are nationwide, regional, Major Trading Areas (MTAs) and Basic Trading Areas (BTAs) as defined below. MTAs and BTAs are based on the Rand McNally 1992 Commercial Atlas & Marketing Guide, 123rd Edition, at pages 38-39 ("BTA/MTA Map"). Rand McNally organizes the 50 States and the District of Columbia into 47 MTAs and 487 BTAs. The BTA/MTA Map is available for public inspection at the Office of Engineering and Technology's Technical Information Center, Room 7317, 2025 M Street, NW., Washington, DC.

(a) The nationwide service area consists of the fifty states, the District of Columbia, American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and United States Virgin Islands.

(b) The regional service areas are defined as follows:

(1) Region 1 (Northeast): The Northeast Region consists of the following MTAs: Boston-Providence, Buffalo-Rochester, New York, Philadelphia, and Pittsburgh.

(2) Region 2 (South): The South Region consists of the following MTAs: Atlanta, Charlotte-Greensboro-Greenville-Raleigh, Jacksonville, Knoxville, Louisville-Lexington-Evansville, Nashville, Miami-Fort Lauderdale, Richmond-Norfolk, Tampa-St. Petersburg-Orlando, and Washington-Baltimore; and, Puerto Rico and United States Virgin Islands.

(3) Region 3 (Midwest): The Midwest Region consists of the following MTAs: Chicago, Cincinnati-Dayton, Cleveland, Columbus, Des Moines-Quad Cities, Detroit, Indianapolis, Milwaukee, Minneapolis-St. Paul, and Omaha.

(4) Region 4 (Central): The Central Region consists of the following MTAs: Birmingham, Dallas-Fort Worth, Denver, El Paso-Albuquerque, Houston, Kansas City, Little Rock, Memphis-Jackson, New Orleans-Baton Rouge, Oklahoma City, San Antonio, St. Louis, Tulsa, and Wichita.

(5) Region 5 (West): The West Region consists of the following MTAs: Honolulu, Los Angeles-San Diego, Phoenix, Portland, Salt Lake City, San Francisco-Oakland-San Jose, Seattle (including Alaska), and Spokane-Billings;

and, American Samoa, Guam, and the Northern Mariana Islands.

(c) The MTA service areas are based on the Rand McNally *1992 Commercial Atlas & Marketing Guide*, 123rd Edition, at pages 38–39, with the following exceptions and additions:

(1) Alaska is separated from the Seattle MTA and is licensed separately.

(2) Guam and the Northern Mariana Islands are licensed as a single MTA-like area.

(3) Puerto Rico and the United States Virgin Islands are licensed as a single MTA-like area.

(4) American Samoa is licensed as a single MTA-like area.

(d) The BTA service areas are based on the Rand McNally *1992 Commercial Atlas & Marketing Guide*, 123rd Edition, at pages 38–39, with the following additions licensed separately as BTA-like areas: American Samoa; Guam; Northern Mariana Islands; Mayagüez/Agua-dilla-Ponce, Puerto Rico; San Juan, Puerto Rico; and the United States Virgin Islands. The Mayagüez/Agua-dilla-Ponce BTA-like service area consists of the following municipios: Adjuntas, Aguada, Aguadilla, Añasco, Arroyo, Cabo Rojo, Coamo, Guánica, Guayama, Guayanilla, Hormigueros, Isabela, Jayuya, Juana Díaz, Lajas, Las Marias, Maricao, Maunabo, Mayagüez, Moca, Patillas, Peñuelas, Ponce, Quebradillas, Rincón, Sabana Grande, Salinas, San Germán, Santa Isabel, Villalba, and Yauco. The San Juan BTA-like service area consists of all other municipios in Puerto Rico.

[59 FR 14118, Mar. 25, 1994, as amended at 59 FR 46199, Sept. 7, 1994]

**§ 24.103 Construction requirements.**

(a) Nationwide narrowband PCS licensees shall construct base stations that provide coverage to a composite area of 750,000 square kilometers or serve 37.5 percent of the U.S. population within five years of initial license grant date; and, shall construct base stations that provide coverage to a composite area of 1,500,000 square kilometers or serve 75 percent of the U.S. population within ten years of initial license grant date.

(b) Regional narrowband PCS licensees shall construct base stations that provide coverage to a composite area of

150,000 square kilometers or serve 37.5 percent of the population of the service area within five years of initial license grant date; and, shall construct base stations that provide coverage to a composite area of 300,000 square kilometers or serve 75 percent of the service area population within ten years of initial license grant date.

(c) MTA narrowband PCS licensees shall construct base stations that provide coverage to a composite area of 75,000 square kilometers or 25 percent of the geographic area, or serve 37.5 percent of the population of the service area within five years of initial license grant date; and, shall construct base stations that provide coverage to a composite area of 150,000 square kilometers or 50 percent of the geographic area, or serve 75 percent of the population of the service area within ten years of initial license grant date.

(d) BTA narrowband PCS licensees shall construct at least one base station and begin providing service in its BTA within one year of initial license grant date.

(e) In demonstrating compliance with the above construction requirements, licensees must base their calculations on signal field strengths that ensure reliable service for the technology utilized.

(1) For the purpose of this section, the service radius of a base station may be calculated using the following formula:

$$d_{km} = 2.53 \times h_m^{0.34} \times p^{0.17}$$

where  $d_{km}$  is the radial distance in kilometers,

$h_m$  is the antenna HAAT of the base station in meters, and

$p$  is the e.r.p. of the base station in watts.

(2) Alternatively, licensees may use any service radius contour formula developed or generally used by industry, provided that such formula is based on the technical characteristics of their system.

(f) Upon meeting the five and ten year benchmarks in paragraphs (a), (b) and (c) of this section, licensees shall



file a map and other supporting documentation that demonstrates compliance with the geographic area or population coverage requirement. BTA licensees shall file a statement indicating commencement of service. The filing must be received at the Commission on or before expiration of the relevant period.

(g) If the sale of a license is approved, the new licensee is held to the original build-out requirement.

(h) Failure by a licensee to meet the above construction requirements shall result in forfeiture of the license and ineligibility to regain it.

NOTE: Population-based construction requirements contained in this section shall be based on the 1990 census.

[59 FR 14118, Mar. 25, 1994]

#### § 24.129 Frequencies.

The following frequencies are available for narrowband PCS. All licenses on channels indicated with an (\*) will be eligible for bidding credits of 25 percent, and all licenses indicated with an (\*\*) will be eligible for bidding credits of 40 percent, as set forth in § 24.309(b) if competitive bidding is used to award such licenses.

(a) Eleven frequencies are available for assignment on a nationwide basis as follows:

(1) Five 50 kHz channels paired with 50 kHz channels:

Channel 1: 940.00–940.05 and 901.00–901.05 MHz;  
 Channel 2: 940.05–940.10 and 901.05–901.10 MHz;  
 Channel 3: 940.10–940.15 and 901.10–901.15 MHz;  
 Channel 4: 940.15–940.20 and 901.15–901.20 MHz;  
 and,  
 Channel 5: 940.20–940.25 and 901.20–901.25 MHz.\*

(2) Three 50 kHz channels paired with 12.5 kHz channels:

Channel 6: 930.40–930.45 and 901.7500–901.7625 MHz;  
 Channel 7: 930.45–930.50 and 901.7625–901.7750 MHz; and,  
 Channel 8: 930.50–930.55 and 901.7750–901.7875 MHz.\*

(3) Three 50 kHz unpaired channels:

Channel 9: 940.75–940.80 MHz;  
 Channel 10: 940.80–940.85 MHz; and,  
 Channel 11: 940.85–940.90 MHz.\*

(b) Six frequencies are available for assignment on a regional basis as follows:

(1) Two 50 kHz channels paired with 50 kHz channels:

Channel 12: 940.25–940.30 and 901.25–901.30 MHz; and,  
 Channel 13: 940.30–940.35 and 901.30–901.35 MHz.\*\*

(2) Four 50 kHz channels paired with 12.5 kHz channels:

Channel 14: 930.55–930.60 and 901.7875–901.8000 MHz;  
 Channel 15: 930.60–930.65 and 901.8000–901.8125 MHz;  
 Channel 16: 930.65–930.70 and 901.8125–901.8250 MHz; and,  
 Channel 17: 930.70–930.75 and 901.8250–901.8375 MHz.\*\*

(c) Seven frequencies are available for assignment on a MTA basis as follows:

(1) Two 50 kHz channels paired with 50 kHz channels:

Channel 18: 940.35–940.40 and 901.35–901.40 MHz; and,  
 Channel 19: 940.40–940.45 and 901.40–901.45 MHz.\*

(2) Three 50 kHz channels paired with 12.5 kHz channels:

Channel 20: 930.75–930.80 and 901.8375–901.8500 MHz;  
 Channel 21: 930.80–930.85 and 901.8500–901.8625 MHz; and,  
 Channel 22: 930.85–930.90 and 901.8625–901.8750 MHz.\*

(3) Two 50 kHz unpaired channels:

Channel 23: 940.90–940.95 MHz; and,  
 Channel 24: 940.95–941.00 MHz.\*

(d) Two 50 kHz channels paired with 12.5 kHz channels are available for assignment on a BTA basis:

Channel 25: 930.90–930.95 and 901.8750–901.8875 MHz; and,  
 Channel 26: 930.95–931.00 and 901.8875–901.9000 MHz.\*

NOTE 1: Operations in markets or portions of markets which border other countries, such as Canada and Mexico, will be subject to on-going coordination arrangements with neighboring countries.

[59 FR 44069, Aug. 26, 1994]

#### § 24.130 Paging response channels.

(a) The channels listed in paragraphs (b) and (c) of this section are available to licensees of conventional one-way

paging base stations licensed pursuant to part 22 or part 90 of this chapter as of the application filing deadline for the paging response channels. Eligibility for response channels shall be based on the authorized service area of each existing paging licensee. This service area is defined as the area within a 32.2 kilometer radius of the licensee's base stations or, in the case of "F," "G," "H," or "K" class stations under §§ 22.502(c) and 90.495(b)(1) of this chapter, as the area that is within the service area radius specified in § 22.504(b)(2) of this chapter. Existing paging licensees are eligible to bid for any response channel in any BTA or MTA which encompasses an authorized base station or which is partly or wholly overlapped by a licensee's service area. These channels shall be used only in paired communications with existing paging channels to provide mobile-to-base station communications. Until two years after the date of initial license grant, eligible paging licensees are limited to a maximum of two response channels within the same geographic area. Licenses for paging response channels are not counted toward the multiple ownership restrictions of § 24.101.

UNPAIRED FREQUENCIES (MHZ)

	License area
Mobile transmit <sup>1</sup> (12.5 kHz bandwidth): 901.90625, 901.94375, 901.98125, 901.91875, 901.95625, 901.99375, 901.93125, 901.96875 .....	BTA
Base or mobile transmit (50 kHz bandwidth): 940.775, 940.825, 940.875 .....	Nationwide
940.925, 940.975 .....	MTA

<sup>1</sup> Limited to paging licensees authorized under parts 22 and 90 of this chapter.

(b) The following four 12.5 kHz unpaired channels are available for assignment on a MTA basis:

- A: 901.9000–901.9125 MHz;
- B: 901.9125–901.9250 MHz;
- C: 901.9250–901.9375 MHz; and
- D: 901.9375–901.9500 MHz.

(c) The following four 12.5 kHz unpaired channels are available for assignment on a BTA basis:

- E: 901.9500–901.9625 MHz;
- F: 901.9625–901.9750 MHz;
- G: 901.9750–901.9875 MHz; and

H: 901.9875–902.0000 MHz.

[59 FR 14119, Mar. 25, 1994; 59 FR 15269, Mar. 31, 1994, as amended at 59 FR 44069, Aug. 26, 1994; 59 FR 46200, Sept. 7, 1994]

§ 24.131 Authorized bandwidth.

The authorized bandwidth of narrowband PCS channels will be 10 kHz for 12.5 kHz channels and 45 kHz for 50 kHz channels. For aggregated adjacent channels, a maximum authorized bandwidth of 5 kHz less than the total aggregated channel width is permitted.

§ 24.132 Power and antenna height limits.

(a) Stations transmitting in the 901–902 MHz band are limited to 7 watts e.r.p.

(b) Mobile stations transmitting in the 930–931 MHz and 940–941 MHz bands are limited to 7 watts e.r.p.

(c) Base stations transmitting in the 930–931 MHz and 940–941 MHz bands are limited to 3500 watts e.r.p. per authorized channel and are unlimited in antenna height except as provided in paragraph (d) of this section.

(d) MTA and BTA base stations located between 200 kilometers (124 miles) and 80 kilometers (50 miles) from their licensed service area border are limited to the power levels in the following table:

Antenna HAAT in meters (feet) (see § 99.53 for HAAT calculation method)	Effective radiated power (e.r.p.) (watts)
183 (600) and below .....	3500
183 (600) to 208 (682) .....	3500 to 2584
208 (682) to 236 (775) .....	2584 to 1883
236 (775) to 268 (880) .....	1883 to 1372
268 (880) to 305 (1000) .....	1372 to 1000
305 (1000) to 346 (1137) .....	1000 to 729
346 (1137) to 394 (1292) .....	729 to 531
394 (1292) to 447 (1468) .....	531 to 387
447 (1468) to 508 (1668) .....	387 to 282
508 (1668) to 578 (1895) .....	282 to 206
578 (1895) to 656 (2154) .....	206 to 150
656 (2154) to 746 (2447) .....	150 to 109
746 (2447) to 848 (2781) .....	109 to 80
848 (2781) to 963 (3160) .....	80 to 58
963 (3160) to 1094 (3590) .....	58 to 42
1094 (3590) to 1244 (4080) .....	42 to 31
1244 (4080) to 1413 (4636) .....	31 to 22
Above 1413 (4636) .....	16

For heights between the values listed above, linear interpolation shall be used to determine maximum e.r.p.

(e) MTA and BTA base stations located less than 80 kilometers (50 miles) from the licensed service area border

must limit their effective radiated power in accordance with the following formula:

$$P_w = 0.0175 \times d_{km}^{6.6666} \times h_m^{-3.1997}$$

$P_w$  is effective radiated power in watts.

$d_{km}$  is distance in kilometers.

$h_m$  is antenna HAAT in meters; see § 99.53 for HAAT calculation method.

(f) All power levels specified in this section are expressed in terms of the maximum power, averaged over a 100 millisecond interval, when measured with instrumentation calibrated in terms of an rms-equivalent voltage with a resolution bandwidth equal to or greater than the authorized bandwidth.

(g) Additionally, PCS stations will be subject to any power limits imposed by international agreements.

[58 FR 59183, Nov. 8, 1993; 59 FR 15269, Mar. 31, 1994]

#### § 24.133 Emission limits.

(a) The power of any emission shall be attenuated below the transmitter power (P), as measured in accordance with § 99.132(f), in accordance with the following schedule:

(1) For transmitters authorized a bandwidth greater than 10 kHz:

(i) On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of up to and including 40 kHz: at least  $116 \text{ Log}_{10} ((f_d+10)/6.1)$  decibels or 50 plus  $10 \text{ Log}_{10} (P)$  decibels or 70 decibels, whichever is the lesser attenuation;

(ii) On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of more than 40 kHz: at least  $43+10 \text{ Log}_{10} (P)$  decibels or 80 decibels, whichever is the lesser attenuation. (2) For transmitters authorized a bandwidth of 10 kHz:

(i) On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of up to and including 20 kHz: at least  $116 \times \text{Log}_{10} ((f_d+5)/3.05)$  decibels or  $50+10 \times \text{Log}_{10} (P)$  decibels or 70 decibels, whichever is the lesser attenuation;

(ii) On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of more than 20 kHz: at least  $43+10 \text{ Log}_{10} (P)$  decibels or 80 decibels, whichever is the lesser attenuation.

(b) The measurements of emission power can be expressed in peak or average values provided they are expressed in the same parameters as the transmitter power.

(c) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

(d) The following minimum spectrum analyzer resolution bandwidth settings will be used: 300 Hz when showing compliance with paragraphs (a)(1)(i) and (a)(2)(i) of this section; and 30 kHz when showing compliance with paragraphs (a)(1)(ii) and (a)(2)(ii) of this section.

[58 FR 59183, Nov. 8, 1993, as amended at 59 FR 14119, Mar. 25, 1994]

#### § 24.134 Co-channel separation criteria.

The minimum co-channel separation distance between base stations in different service areas is 113 kilometers (70 miles). A co-channel separation distance is not required for the base stations of the same licensee or when the affected parties have agreed to other co-channel separation distances.

#### § 24.135 Frequency stability.

(a) The frequency stability of the transmitter shall be maintained within  $\pm 0.0001$  percent ( $\pm 1$  ppm) of the center frequency over a temperature variation of  $-30^\circ$  Celsius to  $+50^\circ$  Celsius at normal supply voltage, and over a variation in the primary supply voltage of 85 percent to 115 percent of the rated supply voltage at a temperature of  $20^\circ$  Celsius.

(b) For battery operated equipment, the equipment tests shall be performed using a new battery without any further requirement to vary supply voltage.

(c) It is acceptable for a transmitter to meet this frequency stability requirement over a narrower temperature range provided the transmitter

ceases to function before it exceeds these frequency stability limits.

### Subpart E—Broadband PCS

SOURCE: 59 FR 32854, June 24, 1994, unless otherwise noted.

#### § 24.200 Scope.

This subpart sets out the regulations governing the licensing and operations of personal communications services authorized in the 1850–1910 and 1930–1990 MHz bands.

#### § 24.202 Service areas.

Broadband PCS service areas are Major Trading Areas (MTAs) and Basic Trading Areas (BTAs) as defined below. MTAs and BTAs are based on the Rand McNally *1992 Commercial Atlas & Marketing Guide*, 123rd Edition, at pages 38–39 (“BTA/MTA Map”). Rand McNally organizes the 50 states and the District of Columbia into 47 MTAs and 487 BTAs. The BTA/MTA Map is available for public inspection as the Office of Engineering and Technology’s Technical Information Center, room 7317, 2025 M Street, NW., Washington, DC.

(a) The MTA service areas are based on the Rand McNally *1992 Commercial Atlas & Marketing Guide*, 123rd Edition, at pages 38–39, with the following exceptions and additions:

(1) Alaska is separated from the Seattle MTA and is licensed separately.

(2) Guam and the Northern Mariana Islands are licensed as a single MTA-like area.

(3) Puerto Rico and the United States Virgin Islands are licensed as a single MTA-like area.

(4) American Samoa is licensed as a single MTA-like area.

(b) The BTA service areas are based on the Rand McNally *1992 Commercial Atlas & Marketing Guide*, 123rd Edition, at pages 38–39, with the following additions licensed separately as BTA-like areas: American Samoa; Guam; Northern Mariana Islands; Mayagüez/Agua-dilla-Ponce, Puerto Rico; San Juan, Puerto Rico; and the United States Virgin Islands. The Mayagüez/Agua-dilla-Ponce BTA-like service area consists of the following municipios: Adjuntas, Aguada, Aguadilla, Añasco, Arroyo, Cabo Rojo, Coamo, Guánica,

Guayama, Guayanilla, Hormigueros, Isabela, Jayuya, Juana Díaz, Lajas, Las Marías, Mayagüez, Maricao, Maunabo, Moca, Patillas, Peñuelas, Ponce, Quebradillas, Rincón, Sabana Grande, Salinas, San Germán, Santa Isabel, Villalba, and Yauco. The San Juan BTA-like service area consists of all other municipios in Puerto Rico.

[59 FR 32854, June 24, 1994; 59 FR 40835, Aug. 10, 1994]

#### § 24.203 Construction requirements.

(a) Licensees of 30 MHz blocks must serve with a signal level sufficient to provide adequate service to at least one-third of the population in their licensed area within five years of being licensed and two-thirds of the population in their licensed area within 10 years of being licensed. Licensees may choose to define population using the 1990 census or the 2000 census. Failure by any licensee to meet these requirements will result in forfeiture or non-renewal of the license and the licensee will be ineligible to regain it.

(b) Licensees of 10 MHz blocks must serve with a signal level sufficient to provide adequate service to at least one-quarter of the population in their licensed area within five years of being licensed, or make a showing of substantial service in their licensed area within five years of being licensed. Population is defined as the 1990 population census. Licensees may elect to use the 2000 population census to determine the five-year construction requirement. Failure by any licensee to meet these requirements will result in forfeiture of the license and the licensee will be ineligible to regain it.

(c) Licensees must file maps and other supporting documents showing compliance with the respective construction requirements within the appropriate five- and ten-year benchmarks of the date of their initial licenses.

#### § 24.229 Frequencies.

The frequencies available in the Broadband PCS service are listed in this section in accordance with the frequency allocations table of Section 2.106 of this chapter.

(a) The following frequency blocks are available for assignment on an MTA basis:

Block A: 1850–1865 MHz paired with 1930–1945 MHz; and

Block B: 1870–1885 MHz paired with 1950–1965 MHz.

(b) The following frequency blocks are available for assignment on a BTA basis:

Block C: 1895–1910 MHz paired with 1975–1990 MHz;

Block D: 1865–1870 MHz paired with 1945–1950 MHz;

Block E: 1885–1890 MHz paired with 1965–1970 MHz; and

Block F: 1890–1895 MHz paired with 1970–1975 MHz.

(c) After January 1, 2000, licensees that have met the 5-year construction requirement may assign portions of licensed PCS spectrum.

[59 FR 32854, June 24, 1994, as amended at 60 FR 13917, Mar. 15, 1995; 60 FR 26375, May 17, 1995; 61 FR 33868, July 1, 1996]

**§24.232 Power and antenna height limits.**

(a) Base stations are limited to 1640 watts peak equivalent isotropically radiated power (e.i.r.p.) with an antenna height up to 300 meters HAAT. See §24.53 for HAAT calculation method. Base station antenna heights may exceed 300 meters with a corresponding reduction in power; see Table 1 of this section. In no case may the peak output power of a base station transmitter exceed 100 watts. The service area boundary limit and microwave protection criteria specified in Section 24.236 and Section 24.237 apply.

TABLE 1.—REDUCED POWER FOR BASE STATION ANTENNA HEIGHTS OVER 300 METERS

HAAT in meters	Maximum e.i.r.p. (watts)
≤300 .....	1,640
≤500 .....	1,070
≤1,000 .....	490
≤1,500 .....	270
≤2,000 .....	160

(b) Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

(c) Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, etc., so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

**§24.235 Frequency stability.**

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

**§24.236 Field strength limits.**

The predicted or measured median field strength at any location on the border of the PCS service area shall not exceed 47 dBuV/m unless the parties agree to a higher field strength.

**§24.237 Interference protection.**

(a) All licensees are required to coordinate their frequency usage with the co-channel or adjacent channel incumbent fixed microwave licensees in the 1850–1990 MHz band. Coordination must occur before initiating operations from any base station. Problems that arise during the coordination process are to be resolved by the parties to the coordination. Licensees are required to coordinate with all users possibly affected, as determined by Appendix I to this subpart E (Appendix E of the Memorandum Opinion and Order, GEN Docket No. 90-314, FCC 94-144; TIA Telecommunications Systems Bulletin 10-F, “Interference Criteria for Microwave Systems,” May 1994, (TSB10-F)); or an alternative method agreed to by the parties.

(b) The results of the coordination process need to be reported to the Commission only if the parties fail to agree. Because broadband PCS licensees are required to protect fixed microwave licensees in the 1850–1990 MHz band, the Commission will be involved in the coordination process only upon complaint of interference from a fixed

microwave licensee. In such a case, the Commission will resolve the issues.

(c) In all other respects, coordination procedures are to follow the requirements of §101.103(d) of this chapter to the extent that these requirements are not inconsistent with those specified in this part.

(d) The licensee must perform an engineering analysis to assure that the proposed facilities will not cause interference to existing OFS stations within

the coordination distance specified in Table 2 of a magnitude greater than that specified in the criteria set forth in paragraph (e) and (f) of this section, unless there is prior agreement with the affected OFS licensee. Interference calculations shall be based on the sum of the power received at the terminals of each microwave receiver from all of the applicant's current and proposed PCS operations.

TABLE 2.—COORDINATION DISTANCES IN KILOMETERS  
[PCS Base Station Antenna HAAT in Meters]

e.i.r.p. (W)	5	10	20	50	100	150	200	250	300	500	1000	1500	2000
0.1	90	93	99	110	122	131	139	146	152	173	210	239	263
0.5	96	100	105	116	128	137	145	152	158	179	216	245	269
1	99	103	108	119	131	140	148	155	161	182	219	248	272
2	120	122	126	133	142	148	154	159	164	184	222	250	274
5	154	157	161	168	177	183	189	194	198	213	241	263	282
10	180	183	187	194	203	210	215	220	225	240	268	291	310
20	206	209	213	221	229	236	242	247	251	267	296	318	337
50	241	244	248	255	264	271	277	282	287	302	331	354	374
100	267	270	274	282	291	297	303	308	313	329	358	382	401
200	293	296	300	308	317	324	330	335	340	356	386	409	.....
500	328	331	335	343	352	359	365	370	375	391	421	.....	.....
1000	354	357	361	369	378	385	391	397	402	418	.....	.....	.....
1200	361	364	368	376	385	392	398	404	409	.....	.....	.....	.....
1640	372	375	379	388	397	404	410	416	421	.....	.....	.....	.....

Note: If actual value does not match table values, round to the closest higher value on this table. See Section 24.53 for HAAT calculation method.

(e) For microwave paths of 25 kilometers or less, interference determinations shall be based on the C/I criteria set forth in TIA Telecommunications Systems Bulletin 10-F, "Interference Criteria for Microwave Systems," May 1994 (TSB10-F).

(f) For microwave paths longer than 25 kilometers, the interference protection criterion shall be such that the interfering signal will not produce more than 1.0 dB degradation of the practical threshold of the microwave receiver for analog system, or such that the interfering signal will not cause an increase in the bit error rate (BER) from 10E-6 to 10E-5 for digital systems.

(g) The development of the C/I ratios and interference criteria specified in paragraphs (e) and (f) of this section and the methods employed to compute the interfering power at the microwave receivers shall follow generally acceptable good engineering practices. The procedures described for computing interfering signal levels in (Appendix I

to this subpart E Appendix E of the Memorandum Opinion and Order, GEN Docket No. 90-314, FCC 94-144) shall be applied. Alternatively, procedures for determining interfering signal levels and other criteria as may be developed by the Electronics Industries Association (EIA), the Institute of Electrical and Electronics Engineers, Inc. (IEEE), the American National Standards Institute (ANSI) or any other recognized authority will be acceptable to the Commission.

[59 FR 32854, June 24, 1994, as amended at 61 FR 29691, June 21, 1996]

**§24.238 Emission limits.**

(a) On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB.

(b) Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately

outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

(c) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges, both upper and lower, as the design permits.

(d) The measurements of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

(e) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

POLICIES GOVERNING MICROWAVE RELOCATION FROM THE 1850-1990 MHZ BAND

**§24.239 Cost-sharing requirements for Broadband PCS.**

Frequencies in the 1850-1990 MHz band listed in §101.147(c) of this chapter have been allocated for use by PCS. In accordance with procedures specified in §§101.69 through 101.81 of this chapter, PCS entities (both licensed and unlicensed) are required to relocate the existing Fixed Microwave Services (FMS) licensees in these bands if interference to the existing FMS operations would occur. All PCS entities who benefit from spectrum clearance by other PCS entities must contribute to such relocation costs. PCS entities may satisfy this requirement by entering into private cost-sharing agreements or agreeing to terms other than those specified in §24.243. However, PCS entities are required to reimburse other PCS entities that incur relocation costs and are not parties to the alternative agreement. In addition, parties to a private cost-sharing agreement may seek reimbursement through the clearinghouse (as discussed in §24.241) from PCS entities that are not parties to the agree-

ment. The cost-sharing plan is in effect during all phases of microwave relocation specified in §101.69 of this chapter.

[61 FR 29691, June 12, 1996]

**§24.241 Administration of the Cost-Sharing Plan.**

The Wireless Telecommunications Bureau, under delegated authority, will select an entity to operate as a neutral, not-for-profit clearinghouse. This clearinghouse will administer the cost-sharing plan by, *inter alia*, maintaining all of the cost and payment records related to the relocation of each link and determining the cost-sharing obligation of subsequent PCS entities. The cost-sharing rules will not take effect until an administrator is selected.

[61 FR 29691, June 12, 1996]

**§24.243 The Cost-Sharing Formula.**

A PCS relocater who relocates an interfering microwave link, i.e., one that is in all or part of its market area and in all or part of its frequency band, is entitled to pro rata reimbursement based on the following formula:

$$R_N = \frac{C}{N} \times \frac{[120 - (T_m)]}{120}$$

(a)  $R_N$  equals the amount of reimbursement.

(b)  $C$  equals the actual cost of relocating the link. Actual relocation costs include, but are not limited to, such items as: radio terminal equipment (TX and/or RX—antenna, necessary feed lines, MUX/Modems); towers and/or modifications; back-up power equipment; monitoring or control equipment; engineering costs (design/path survey); installation; systems testing; FCC filing costs; site acquisition and civil works; zoning costs; training; disposal of old equipment; test equipment (vendor required); spare equipment; project management; prior coordination notification under §101.103(d) of this chapter; required antenna upgrades for interference control; power plant upgrade (if required); electrical grounding systems; Heating Ventilation and Air Conditioning (HVAC) (if required); alternate transport equipment; and leased facilities.  $C$  also includes incumbent transaction expenses

that are directly attributable to the relocation, subject to a cap of two percent of the “hard” costs involved. C may not exceed \$250,000 per link, with an additional \$150,000 permitted if a new or modified tower is required.

(c) *N* equals the number of PCS entities that would have interfered with the link. For the PCS relocater,  $N = 1$ . For the next PCS entity that would have interfered with the link,  $N=2$ , and so on.

(d)  $T_M$  equals the number of months that have elapsed between the month the PCS relocater obtains reimbursement rights and the month that the clearinghouse notifies a later-entrant of its reimbursement obligation. A PCS relocater obtains reimbursement rights on the date that it signs a relocation agreement with a microwave incumbent.

[61 FR 29692, June 12, 1996]

**§ 24.245 Reimbursement under the Cost-Sharing Plan.**

(a) *Registration of Reimbursement Rights.* To obtain reimbursement, a PCS relocater must submit documentation of the relocation agreement to the clearinghouse within ten business days of the date a relocation agreement is signed with an incumbent. If the clearinghouse has not yet been selected, the PCS relocater will be responsible for submitting documentation of the relocation agreement within ten business days of the date that the Wireless Telecommunications Bureau issues a public notice announcing that the clearinghouse has been established and has begun operation.

(b) *Documentation of Expenses.* Once relocation occurs, the PCS relocater must submit documentation itemizing the amount spent for items listed in § 24.243(b). The PCS relocater must identify the particular link associated with appropriate expenses (i.e., costs may not be averaged over numerous links). If a PCS relocater pays a microwave incumbent a monetary sum to relocate its own facilities, the PCS relocater must estimate the costs associ-

ated with relocating the incumbent by itemizing the anticipated cost for items listed in § 24.243(b). If the sum paid to the incumbent cannot be accounted for, the remaining amount is not eligible for reimbursement. A PCS relocater may submit receipts or other documentation to the clearinghouse for all relocation expenses incurred since April 5, 1995.

(c) *Full Reimbursement.* A PCS relocater who relocates a microwave link that is either fully outside its market area or its licensed frequency band may seek full reimbursement through the clearinghouse of compensable costs, up to the reimbursement cap as defined in § 24.243(b). Such reimbursement will not be subject to depreciation under the cost-sharing formula.

[61 FR 29692, June 12, 1996]

**§ 24.247 Triggering a Reimbursement Obligation.**

(a) *Licensed PCS.* The clearinghouse will apply the following test to determine if a PCS entity preparing to initiate operations must pay a PCS relocater in accordance with the formula detailed in § 24.243:

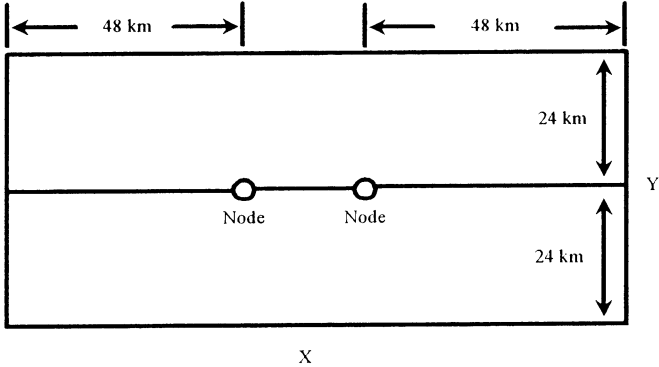
(1) All or part of the relocated microwave link was initially co-channel with the licensed PCS band(s) of the subsequent PCS entity;

(2) A PCS relocater has paid the relocation costs of the microwave incumbent; and

(3) The subsequent PCS entity is preparing to turn on a fixed base station at commercial power and the fixed base station is located within a rectangle (Proximity Threshold) described as follows:

(i) The length of the rectangle shall be  $x$  where  $x$  is a line extending through both nodes of the microwave link to a distance of 48 kilometers (30 miles) beyond each node. The width of the rectangle shall be  $y$  where  $y$  is a line perpendicular to  $x$  and extending for a distance of 24 kilometers (15 miles) on both sides of  $x$ . Thus, the rectangle is represented as follows:





(ii) If the application of the Proximity Threshold test indicates that a reimbursement obligation exists, the clearinghouse will calculate the reimbursement amount in accordance with the cost-sharing formula and notify the subsequent PCS entity of the total amount of its reimbursement obligation.

(b) *Unlicensed PCS.* UTAM's reimbursement obligation is triggered either:

(1) When a county is cleared of microwave links in the unlicensed allocation, and UTAM invokes a Zone 1 power cap as a result of third party relocation activities; or

(2) A county is cleared of microwave links in the unlicensed allocation and UTAM reclassifies a Zone 2 county to Zone 1 status.

[61 FR 29692, June 12, 1996]

**§ 24.249 Payment Issues.**

(a) *Timing.* On the day that a PCS entity files its prior coordination notice (PCN) in accordance with § 101.103(d) of this chapter, it must file a copy of the PCN with the clearinghouse. The clearinghouse will determine if any reimbursement obligation exists and notify the PCS entity in writing of its repayment obligation, if any. When the PCS entity receives a written copy of such obligation, it must pay directly to the PCS relocater the amount owed within thirty days, with the exception of those businesses that qualify for installment payments. A business that qualifies for an installment payment plan must make its first installment payment within thirty days of notice from the clearinghouse. UTAM's first payment will be due thirty days after its reimbursement obligation is triggered as described in § 24.247(b).

(b) *Eligibility for Installment Payments.* PCS licensees that are allowed to pay for their licenses in installments under our designated entity rules will have identical payment options available to them with respect to payments under the cost-sharing plan. The specific terms of the installment payment mechanism, including the treatment of principal and interest, are the same as those applicable to the licensee's installment auction payments. If, for any reason, the entity eligible for install-

ment payments is no longer eligible for such installment payments on its license, that entity is no longer eligible for installment payments under the cost-sharing plan. UTAM may make quarterly payments over a five-year period with an interest rate of prime plus 2.5 percent. UTAM may also negotiate separate repayment arrangements with other parties.

[61 FR 29693, June 12, 1996]

**§ 24.251 Dispute Resolution Under the Cost-Sharing Plan.**

Disputes arising out of the cost-sharing plan, such as disputes over the amount of reimbursement required, must be brought, in the first instance, to the clearinghouse for resolution. To the extent that disputes cannot be resolved by the clearinghouse, parties are encouraged to use expedited ADR procedures, such as binding arbitration, mediation, or other ADR techniques.

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**§ 24.253 Termination of Cost-Sharing Obligations.**

The cost-sharing plan will sunset for all PCS entities on April 4, 2005, which is ten years after the date that voluntary negotiations commenced for A and B block PCS entities. Those PCS entities that are paying their portion of relocation costs on an installment basis must continue the payments until the obligation is satisfied.

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**Appendix I to Subpart E—A Procedure for Calculating PCS Signal Levels at Microwave Receivers (Appendix E of the Memorandum Opinion and Order)**

The new Rules adopted in Part 24 stipulate that estimates of interference to fixed microwave operations from a PCS operation will be based on the sum of signals received at a microwave receiver from the PCS operation. This appendix describes a procedure for computing this PCS level.

In general, the procedure involves four steps:

1. Determine the geographical coordinates of all microwave receivers operating on co-channel and adjacent frequencies within the