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of an application completed in accordance with the instructions thereon.

(k) Applicants for Group K channels shall apply for adjacent channels and the requested channels shall overlap the least possible number of Group A channels, except that different channel arrangements may be authorized upon an adequate showing that the foregoing arrangement cannot be used or would be contrary to the public interest, or in order to avoid potential interference or to permit a more efficient use.

(l) The band 13.15–13.20 GHz is reserved for television pickup and CARS pickup stations inside a 50 km radius of the 100 television markets delineated in § 76.51 of this chapter. Outside a 50 km radius of the 100 television markets delineated in § 76.51 of this chapter, television pickup stations, CARS stations and NGSO FSS gateway earth stations shall operate on a primary co-equal basis. The band 13.20–13.2125 GHz is reserved for television pickup stations on a primary basis and CARS pickup stations on a secondary basis inside a 50 km radius of the 100 television markets delineated in § 76.51 of this chapter. Outside a 50 km radius of the 100 markets delineated in § 76.51 of this chapter, television pickup stations and NGSO FSS gateway earth stations shall operate on a co-primary basis, CARS stations shall operate on a secondary basis. Fixed television auxiliary stations licensed pursuant to applications accepted for filing before September 1, 1979, may continue operation on channels in the 13.15–13.25 GHz band, subject to periodic license renewals. NGSO FSS gateway uplink transmissions in the 13.15–13.2125 GHz segment shall be limited to a maximum EIRP of 3.2 dBW towards 0 degrees on the radio horizon. These provisions shall not apply to GSO FSS operations in the 12.75–13.25 GHz band.

(m) CARS stations may be authorized for use of the band from 13.20 to 13.25 GHz on a secondary basis to Television Broadcast Auxiliary Stations. CARS stations are also secondary to NGSO FSS gateway earth station uplink operations. Any CARS application seeking authorization for use of the 13.20 to 13.25 GHz band must demonstrate that the applicant has exhausted all spectrum available to it in the 12.70 to 13.20

GHz band. Applications for use of this band must specify whether the channels are 6 MHz, 12.5 MHz, or 25 MHz wide and give the upper and lower boundaries and the polarization for each channel.

[37 FR 3292, Feb. 12, 1972. Redesignated at 37 FR 15926, Aug. 8, 1972]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 78.18, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 78.19 Interference.

(a) Applications for CARS stations shall endeavor to select an assignable frequency or frequencies which will be least likely to result in interference to other licensees in the same area since the FCC itself does not undertake frequency coordination.

(b) Applicants for CARS stations shall take full advantage of all known techniques, such as the geometric arrangement of transmitters and receivers, the use of minimum power required to provide the needed service, and the use of highly directive transmitting and receiving antenna systems, to prevent interference to the reception of television STL, television intercity relay, and other CARS stations.

(c)(1) *Radio Astronomy and Radio Research Installations.* In order to minimize harmful interference at the National Radio Astronomy Observatory site located at Green Bank, Pocahontas County, W. Va., and at the Naval Radio Research Observatory at Sugar Grove, Pendleton County, W. Va., an applicant for authority to construct a CARS station, except a CARS pickup station, or for authority to make changes in the frequency, power, antenna height, or antenna directivity of an existing station within the area bounded by 39°15' N. on the north, 78°30' W. on the east, 37°30' N. on the south and 80°30' W. on the west shall, at the time of filing such application with the Commission, simultaneously notify the Director, National Radio Astronomy Observatory, Post Office Box No. 2, Green Bank, WV 24944, in writing, of the technical particulars of the proposed station. Such notification shall include

the geographical coordinates of the antenna, antenna height, antenna directivity if any, proposed frequency, type of emission, and power. In addition, the applicant shall indicate in his application to the Commission the date notification was made to the Observatory. After receipt of such application, the Commission will allow a period of 20 days for comments or objections in response to the notifications indicated. If an objection to the proposed operation is received during the 20-day period from the National Radio Astronomy Observatory for itself or on behalf of the Naval Radio Research Observatory, the Commission will consider all aspects of the problem and take whatever action is deemed appropriate.

(2) Any applicant for a new permanent base or fixed station authorization to be located on the islands of Puerto Rico, Desecheo, Mona, Vieques, and Culebra, or for a modification of an existing authorization which would change the frequency, power, antenna height, directivity, or location of a station on these islands and would increase the likelihood of the authorized facility causing interference, shall notify the Interference Office, Arecibo Observatory, HC3 Box 53995, Arecibo, Puerto Rico 00612, in writing or electronically, of the technical parameters of the proposal. Applicants may wish to consult interference guidelines, which will be provided by Cornell University. Applicants who choose to transmit information electronically should e-mail to: *prcz@naic.edu*.

(i) The notification to the Interference Office, Arecibo Observatory shall be made prior to, or simultaneously with, the filing of the application with the Commission. The notification shall state the geographical coordinates of the transmit antenna (NAD-83 datum), antenna height above ground, ground elevation at the antenna, antenna directivity and gain, proposed frequency and FCC Rule Part, type of emission, effective isotropic radiated power, and whether the proposed use is itinerant. Generally, submission of the information in the technical portion of the FCC license application is adequate notification. In addition, the applicant shall indicate in its application to the Commission the date notification

was made to the Arecibo Observatory.

(ii) After receipt of such applications, the Commission will allow the Arecibo Observatory a period of 20 days for comments or objections in response to the notification indicated. The applicant will be required to make reasonable efforts in order to resolve or mitigate any potential interference problem with the Arecibo Observatory and to file either an amendment to the application or a modification application, as appropriate. If the Commission determines that an applicant has satisfied its responsibility to make reasonable efforts to protect the Observatory from interference, its application may be granted.

(iii) The provisions of this paragraph do not apply to operations that transmit on frequencies above 15 GHz.

(d) Protection for Table Mountain Radio Receiving Zone, Boulder County, Colorado: Applicants for a station authorization to operate in the vicinity of Boulder County, Colorado under this part are advised to give due consideration, prior to filing applications, to the need to protect the Table Mountain Radio Receiving Zone from harmful interference. These are the research laboratories of the Department of Commerce, Boulder County, Colorado. To prevent degradation of the present ambient radio signal level at the site, the Department of Commerce seeks to ensure that the field strengths of any radiated signals (excluding reflected signals) received on this 1800 acre site (in the vicinity of coordinates 40°07'50" N Latitude, 105°14'40" W Longitude) resulting from new assignments (other than mobile stations) or from the modification or relocation of existing facilities do not exceed the following values:

Frequency range	In authorized bandwidth of service	
	Field strength (mV/m)	Power flux density ¹ (dBW/m ²)
Below 540 kHz	10	-65.8
540 to 1600 kHz	20	-59.8
1.6 to 470 MHz	10	² -65.8
470 to 890 MHz	30	² -56.2
Above 890 MHz	1	² -85.8

¹Equivalent values of power flux density are calculated assuming free space characteristic impedance of 376.7=120 π ohms.

² Space stations shall conform to the power flux density limits at the earth's surface specified in appropriate parts of the FCC rules, but in no case should exceed the above levels in any 4 kHz band for all angles of arrival.

(1) Advance consultation is recommended particularly for those applicants who have no reliable data which indicates whether the field strength or power flux density figures in the above table would be exceeded by their proposed radio facilities (except mobile stations). In such instances, the following is a suggested guide for determining whether coordination is recommended:

(i) All stations within 2.4 km (1.5 statute miles);

(ii) Stations within 4.8 km (3 statute miles) with 50 watts or more effective radiated power (ERP) in the primary plane of polarization in the azimuthal direction of the Table Mountain Radio Receiving Zone;

(iii) Stations within 16 km (10 statute miles) with 1 kW or more ERP in the primary plane of polarization in the azimuthal direction of the Table Mountain Radio Receiving Zone;

(iv) Stations within 80 km (50 statute miles) with 25 kW or more ERP in the primary plane of polarization in the azimuthal direction of the Table Mountain Radio Receiving Zone.

(2) Applicants concerned are urged to communicate with the Radio Frequency Management Coordinator, Department of Commerce, Research Support Services, NOAA R/E5X2, Boulder Laboratories, Boulder, CO 80303; telephone (303) 497-6548, in advance of filing their applications with the Commission.

(3) The Commission will not screen applications to determine whether advance consultation has taken place. However, applicants are advised that such consultation can avoid objections from the Department of Commerce or proceedings to modify any authorization which may be granted which, in fact, delivers a signal at the site in excess of the field strength specified herein.

(e) Protection for Federal Communications Commission monitoring stations:

(1) Applicants in the vicinity of an FCC monitoring station for a radio station authorization to operate new transmitting facilities or changed

transmitting facilities which would increase the field strength produced over the monitoring station over that previously authorized are advised to give consideration, prior to filing applications, to the possible need to protect the FCC stations from harmful interference. Geographical coordinates of the facilities which require protection are listed in § 0.121(c) of the Commission's Rules. Applications for stations (except mobile stations) which will produce on any frequency a direct wave fundamental field strength of *greater than 10 mV/m* in the authorized bandwidth of service (-65.8 dBW/m² power flux density assuming a free space characteristic impedance of 120 ohms) at the referenced coordinates, may be examined to determine extent of possible interference. Depending on the theoretical field strength value and existing root-sum-square or other ambient radio field signal levels at the indicated coordinates, a clause protecting the monitoring station may be added to the station authorization.

(2) In the event that calculated value of expected field exceeds 10 mV/m (-65.8 dBW/m²) at the reference coordinates, or if there is any question whether field strength levels might exceed the threshold value, advance consultation with the FCC to discuss any protection necessary should be considered. Prospective applicants may communicate with: Chief, Compliance and Information Bureau, Federal Communications Commission, Washington, D.C. 20554, Telephone (202) 632-6980.

(3) Advance consultation is suggested particularly for those applicants who have no reliable data which indicates whether the field strength or power flux density figure indicated would be exceeded by their proposed radio facilities (except mobile stations). In such instances, the following is a suggested guide for determining whether an applicant should coordinate:

(i) All stations within 2.4 kilometers (1.5 statute miles);

(ii) Stations within 4.8 kilometers (3 statute miles) with 50 watts or more average effective radiated power (ERP) in the primary plane of polarization in the azimuthal direction of the Monitoring Stations.

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(iii) Stations within 16 kilometers (10 statute miles) with 1 kW or more average ERP in the primary plane of polarization in the azimuthal direction of the Monitoring Station;

(iv) Stations within 80 kilometers (50 statute miles) with 25 kW or more average ERP in the primary plane of polarization in the azimuthal direction of the Monitoring Station;

(4) Advance coordination for stations operating above 1000 MHz is recommended only where the proposed station is in the vicinity of a monitoring station designated as a satellite monitoring facility in section 0.121(c) of the Commission's Rules and also meets the criteria outlined in paragraphs (f) (2) and (3) of this section.

(5) The Commission will not screen applications to determine whether advance consultation has taken place. However, applicants are advised that such consultation can avoid objections from the Federal Communications Commission or modification of any authorization which will cause harmful interference.

(f) Protection to the Federal Government's receive earth station operations in the Denver, Colorado and Washington D.C. areas in the 17,700 to 19,700 MHz band.

(1) With the exception of applicants for a station authorization to operate within a 5 km radius of 39°40'23" N Lat. and 105°13'03" W Long (Morrison, CO), applicants will not be authorized to operate within a 50 km radius of 39°43'00" N Lat. and 104°46'00" W Long. (Denver, CO) and within a 50 km radius of 38°48'00" N Lat. and 76°52'00" W Long. (Washington, DC).

(2) To minimize or avoid harmful interference to Government Satellite Earth Stations located in the Denver, Colorado and Washington, DC areas, any application for a new station license for MVPD operations in the 17.7–17.8 GHz band or to operate in the 17.8–19.7 GHz band for any service, or for modification of an existing station license in these bands which would change the frequency, power, emission, modulation, polarization, antenna height or directivity, or location of such a station, must be coordinated with the Federal Government by the Commission before an authorization

will be issued, if the station or proposed station is located in whole or in part within any of the areas defined by the following rectangles or circles:

(i) A circular area within a 5 km radius of 39°40'23" N Lat. and 105°13'03" W Long. (Morrison, CO)

(ii) Within the rectangular areas defined as follows (vicinity of Denver, CO):

Rectangle 1:

41°30'00" N. Lat. on the north
103°10'00" W. Long. on the east
38°30'00" N. Lat. on the south
106°30'00" W. Long. on the west

Rectangle 2:

38°30'00" N. Lat. on the north
105°00'00" W. Long. on the east
37°30'00" N. Lat. on the south
105°50'00" W. Long. on the west

Rectangle 3:

40°08'00" N. Lat. on the north
107°00'00" W. Long. on the east
39°56'00" N. Lat. on the south
107°15'00" W. Long. on the west

(iii) Within the rectangle and circle areas as follows (vicinity of Washington, DC):

Rectangle

38°40'00" N. Lat. on the north
78°50'00" W. Long. on the east
38°10'00" N. Lat. on the south
79°20'00" W. Long. on the west or

or

(iv) Within a radius of 178 km of 38°48'00" N. Lat. / 76°52'00" W. Long.

NOTE TO §78.19: The coordinates cited in this section are specified in terms of the "North American Datum of 1983 (NAD 83)" with an accuracy of –30 meters with respect to the "National Spatial Reference System."

[37 FR 3292, Feb. 12, 1972]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 78.19, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 78.20 Acceptance of applications; public notice.

(a) Applications which are tendered for filing are dated upon receipt and then forwarded to the Media Bureau where an examination is made to ascertain whether the applications are complete. Applications found to be complete or substantially complete, are accepted for filing and are given a file number. In case of minor defects as to