FM, Milton, Florida. No other comments in opposition to the proposal were received.

2. WXBM requests that Channel 270A be assigned to Citronelle instead of Channel 272A, thereby, enabling WXBM to upgrade its station in order to preserve full Class C status in compliance with the new rules implemented March 1, 1984, in MM Docket No. 84–231, 49 FR 11214, published March 26, 1984.

3. We believe the public interest would be served by the assignment of channel 270A to Citronelle, Alabama, since it could provide a first FM service to the community. The channel can be assigned in compliance with the minimum distance separation requirements of § 73.207 of the Commission's Rules, with a site restriction of 4.7 kilometers (2.9 miles) northeast of the community.

4. Accordingly, pursuant to the authority contained in §§ 4(i), 5(c)(1), 303 (g) and (r) and 307(b) of the Communications Act of 1934, as amended, and §§ 0.61, 0.204(b) and 0.283 of the Commission's Rules, it is ordered, That effective January 15, 1985, the FM Table of Assignments, § 73.202(b) of the Commission's Rules, is amended as follows:

City	Channel No.
Citronelle, Alabama	270A

5. It is further ordered, That this proceeding is terminated.

6. For further information concerning the above, contact Patricia Rawlings, Mass Media Bureau, (202) 634–6530.

(Secs. 4, 303, 48 Stat., as amended, 1066, 1082; 47 U.S.C. 154, 303)

Federal Communications Commission.

Charles Schott,

Chief, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 84–29916 Filed 11–14–84; 8:45 am]

BILLING CODE 6712–01–M

47 CFR Part 73

[MM Docket No. 83–1059; RM–4563]

FM Broadcast Station in Ferndale, CA

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: Action taken herein, at the request of Leroy Demery, assigns FM Channel 257A to Ferndale, California, as that community's first FM allocation.

DATE: Effective: January 14, 1985.

ADDRESS: Federal Communications Commission, Washington, D.C. 20554.

FOR FURTHER INFORMATION CONTACT: Patricia Rawlings, Mass Media Bureau, (202) 634–6530.

SUPPLEMENTARY INFORMATION:

List of Subjects in 47 CFR Part 73

Radio broadcasting.

Report and Order (Proceeding Terminated)

In the matter of amendment of § 73.202(b), Table of Assignments, FM Broadcast Stations (Ferndale, California); MM Docket No. 83–1059, RM–4563.

Adopted: October 29, 1984.
Released: November 8, 1984.

By the Chief, Policy and Rules Division.

1. Before the Commission for consideration is the *Notice of Proposed Rule Making*, 48 FR 47023, published October 17, 1983, proposing the assignment of FM Channel 257A to Ferndale, California, as that community's first FM allocation. The Notice was adopted in response to a petition filed by Leroy Demery ("petitioner"). Petitioner submitted late filed comments reaffirming his intention to apply for the channel, if assigned.[1] No other comments or oppositions to the proposal were received.

2. The Commission believes that the public interest would be served by the assignment of FM Channel 257A to Ferndale, California, in order to provide a first FM service to the community. The assignment can be made in compliance with the minimum distance separation requirements of § 73.207 of the Commission's Rules.

3. Accordingly, pursuant to the authority contained in §§ 4(i), 5(c)(1), 303 (g) and (r) and 307(b) of the Communications Act of 1934, as amended, and §§ 0.61, 0.204(b) and 0.283, of the Commission's Rules, it is ordered, That effective January 14, 1985, the FM Table of Assignments, § 73.202(b) of the Rules, is amended with regard to the following community:

City	Channel No.
Ferndale, California	257A

4. It is further ordered, That this proceeding is terminated.

5. For further information concerning the above, contact Patricia Rawlings, Mass Media Bureau, (202) 634–6530.

(Secs. 4, 303, 48 Stat., as amended, 1066, 1082; 47 U.S.C. 154, 303)

Federal Communications Commission.

Charles Schott,

Chief, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 84–29914 Filed 11–14–84; 8:45 am]

BILLING CODE 6712–01–M

47 CFR Part 73

[MM Docket No. 83–948; RM–4498]

FM Broadcast Station in Keyser, WV

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: This action assigns Channel 296A as a second FM channel to Keyser, West Virginia, in response to a petition filed by Anna Louise Newman.

DATE: Effective January 14, 1985.

ADDRESS: Federal Communications Commission, Washington, D.C. 20554.

FOR FURTHER INFORMATION CONTACT: Montrose H. Tyree, Mass Media Bureau, (202) 634–6530.

SUPPLEMENTARY INFORMATION:

List of Subjects in 47 CFR Part 73

Radio broadcasting.

Report and Order (Proceeding Terminated)

In the matter of amendment of § 73.202(b) Table of Assignments FM Broadcast Stations (Keyser, West Virginia); MM Docket 83–948, RM–4498.

Adopted: October 19, 1984.
Released: November 8, 1984.

By the Chief, Policy and Rules Division.

1. The Commission has before it for consideration the *Notice of Proposed Rule Making* 48 FR 41465, published September 15, 1983, proposing the assignment of Channel 296A to Keyser, West Virginia, as the community's second FM allocation. The *Notice* was adopted in response to a petition filed by Anna Louise Newman ("Petitioner"). Supporting comments were filed by the petitioner reaffirming her intention to apply for the channel, if assigned. No other comments were received.

2. The Commission believes that the public interest would be served by the assignment of Channel 296A to Keyser, West Virginia, in order to provide a second FM service to that community. The channel can be assigned in compliance with the minimum distance

their acceptance. We believe these comments should be accepted since WXBM, Inc. recently acquired the station and was not the licensee as of the filing deadline.

[1] Petitioner's comments were not timely filed, but will be accepted for the purpose of permitting the petitioner to reaffirm his interest in the proposed channel.

separation requirements of Section 73.207 of the Rules.

3. Pursuant to the authority contained in sections 4(1), 5(c)(1), 303 (g) and (r) and 307(b) of the Communications Act of 1934, as amended, and §§ 0.61, 0.204(b) and 0.283 of the Commission's Rules, it is ordered, That effective January 14, 1985, the FM Table of Assignments § 73.202(b) of the Commission's Rules is AMENDED with regard to the following community:

City	Channel No.
Keyser, West Virginia	231, 296A

4. It is further ordered, That this proceeding is terminated.

5. For further information concerning this proceeding, contact Montrose H. Tyree, Mass Media Bureau, (202) 634–6530.

(Secs. 4, 303, 48 Stat., as amended, 1066, 1082; 47 U.S.C. 154, 303)

Federal Communications Commission.

Charles Schott,

Chief, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 84–29913 Filed 11–14–84; 8:45 am]

BILLING CODE 6712–01–M

47 CFR Part 73

[MM Docket No. 84–13; RM–4582]

FM Broadcast Station in Tuscola, MI

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: Action taken herein assigns Channel 269A to Tuscola, Michigan, as that community's first FM service. This action was taken in response to comments filed by James J. McCluskey.

DATE: Effective: January 15, 1985.

ADDRESS: Federal Communications Commission, Washington, D.C. 20554.

FOR FURTHER INFORMATION CONTACT: Patricia Rawlings, Mass Media Bureau, (202) 634–6530.

SUPPLEMENTARY INFORMATION:

List of Subjects in 47 CFR Part 73

Radio broadcasting.

Report and Order (Proceeding Terminated)

In the matter of amendment of § 73.202(b), Table of Assignments, FM Broadcast Stations (Tuscola, Michigan); MM Docket No. 84–13, RM–4582.

Adopted: October 19, 1984.

Released: November 9, 1984.

By the Chief, Policy and Rules Division.

1. The Commission has under consideration the *Notice of Proposed Rule Making*, 49 FR 3216, published January 26, 1984, proposing the assignment of Channel 269A to Tuscola, Michigan, as that community's first FM assignment. The *Notice* was adopted in response to a petition filed by Robert A. Sherman ("petitioner"). Petitioner advised the Commission on January 27, 1984 that he no longer intended to pursue the proposal. However, comments were filed by James J. McCluskey ("McCluskey"), in which he expressed an intention to apply for the channel, if assigned.

2. The Commission believes that the public interest would be served by the assignment of Channel 269A to Tuscola, Michigan, as that community's first FM service. The assignment can be made in compliance with the minimum distance separation requirements of Section 73.207 of the Commission's Rules with a site restriction of 2.3 kilometers (1.4 miles) east of the city to avoid short-spacings to Stations WILS–FM (Channel 269A) in Lansing, Michigan, and Station WDBI–FM (Channel 269A) in Tawas City, Michigan.

3. Canadian concurrence has been obtained since the proposal is within 320 kilometers (200 miles) of the Canadian-U.S. border.

4. Accordingly, pursuant to the authority contained in sections 4(i), 5(c)(1), 303 (g) and (r) and 307(b) of the Communications Act of 1934, as amended, and §§ 0.61, 0.204 and 0.283 of the Commission's Rules, it is ordered, That effective January 15, 1985, the FM Table of Assignments, § 73.202(b) of the Commission's Rules, is amended for the following community:

City	Channel No.
Tuscola, Michigan	269A

5. It is further ordered, That this proceeding is terminated.

6. For further information concerning this proceeding, contact Patricia Rawlings, Mass Media Bureau, (202) 634–6530.

(Secs. 4, 303, 48 stat., as amended, 1066, 1082; 47 U.S.C. 154, 303).

Federal Communications Commission.

Charles Schott,

Chief, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 84–29915 Filed 11–14–84; 8:45 am]

BILLING CODE 6712–01–M

47 CFR Part 73

[BC Docket No. 82–186; RM–3655; FCC 84–514]

FM Broadcast Station Blanketing Interference

AGENCY: Federal Communications Commission.

ACTION: Final rules.

SUMMARY: This action amends the rules regarding FM broadcast station blanketing interference. The current rules are considered to be too ambiguous to permit proper enforcement when the need arises. The new rules define an area where blanketing interference can be assumed to exist and places full responsibility on permittees to remedy complaints of banketing interference within this area. Existing licensees are urged to cooperate with complainants and provide information regarding possible remedies to reduce the interference.

EFFECTIVE DATE: The effective date of this rule will be January 1, 1985.

FOR FURTHER INFORMATION CONTACT: Michael A. Lewis, Mass Media Bureau, (202) 632–9660.

Lists of Subjects in 47 CFR Part 73

Radio broadcasting.

Report and Order Termination of Proceeding

In the Matter of FM Broadcast Station Blanketing Interference (BC Docket No. 82–186, RM–3655).

Adopted: October 26, 1984.

Released: November 8, 1984.

By the Commission.

Introduction

1. The Commission has under consideration a *Notice of Proposed Rule Making* (*Notice*) adopted on April 1, 1982, and the comments and reply comments filed thereto, concerning a proposal to clarify the Commission's Rules regarding FM blanketing interference.[1]

2. Blanketing interference occurs when "an FM station's signal strength or signal power density is of such magnitude that if causes receivers near the transmitting antenna to be partially or completely blocked from receiving other broadcast stations." [2] Although

[1] *Notice of Proposed Rulemaking* in BC Docket No. 82–186 (47 FR 18936, May 3, 1982) adopted April 1, 1982.

[2] Blanketing occurs in both TV and FM receivers. Throughout this *Order*, use of the term "receiver" pertains to both.

the Commission's Rules presently recognize this phenomenon, they do not define an area in which an FM station could expect blanketing to occur, nor do they clearly define the responsibility of the FM station licensees to satisfy complaints.[3] It is the purpose of this *Report and Order* to present rules which clearly define FM blanketing areas and to define the licensee's responsibility for remedying interference complaints within this area. In accordance with Section 73.508(a) of the Commission's Rules, both commercial and noncommercial educational FM broadcast stations are subject to the provisions of this *Order*.

Background

3. This proceeding was initiated in 1980 in response to a petition by the Association of Federal Communications Consulting Engineers (AFCCE) which requested changes to Part 73 of the Commission's Rules to define a blanketing area for FM broadcasters and define specific responsibilities to remedy complaints within this area. AFCCE proposed that the 115 dBu contour be used to define the blanketing area. AFCCE further proposed that an applicant choosing an antenna site where the 115 dBu contour would encompass an area of population density greater than 1000 people per square mile, submit a showing demonstrating that no alternative site is available. Two parties submitted comments in response to the AFCCE petition, the American Broadcasting Company (ABC) and Minnesota Public Radio (MPR). Both parties supported the intent of the petition although ABC was opposed to the showing and MPR warned that the petition does not sufficiently account for the interference caused by spurious emissions generated by collocated stations.

4. After considering the available information, the Commission adopted the *Notice of Proposed Rulemaking* on April 1, 1982. The *Notice* proposed to adopt the 115 dBu contour as the definition of the blanketing area and placed full financial responsibility on licensees to remedy interference complaints within this contour caused by blanketing. The *Notice* declined, however, to propose the alternate site showing described in the AFCCE petition. In response to the *Notice*, approximately 20 parties filed comments, reply comments, and engineering studies.[4] It is on this record that this *Report and Order* is based.

[3] Section 73.315(e) of the Commission's Rules.

[4] See Appendix B for list of commenting parties.

Comments

5. The majority of commenters to the *Notice* accepted the need for rules to govern blanketing interference. Although the majority of licensees are satisfying complaints without regulation, most commenters, including many FM licensees, stated that clarifications of the current rules would be of benefit and are needed.

6. The major disagreement with the *Notice* dealt with the calculation of the 115 dBu contour. We proposed a method to determine the distance to the 115 dBu contour based on free space propagation. Thus, the method did not consider specific antenna heights nor specific antenna patterns. Commenters argued against such a method stating that by neglecting to incorporate the specific facilities into the calculation, the area of responsibility, as well as the burden, would be increased. Commenters also pointed out that deficient input selectivity and insufficient circuit shielding of receivers were primary contributors to susceptibility to blanketing interference. Some commenters urged the Commission to mandate receiver standards and thereby place the burden on manufacturers instead of broadcasters. Commenters also pointed out that the Commission has always set allocation standards by considering receivers of good design and urged the Commission to continue that practice within this proceeding.

7. Most commenters favored the Commission's proposal to assign shared responsibility to collocated stations. ABC, The Senior Road Tower Group, and the Joint Comments of FM Licensees (Joint Comments), however, proposed that if the offending station could be identified easily, that station should bear full responsibility. Minnesota Public Radio (MPR) submitted very detailed reports regarding the interference generated by collocated stations. The reports dealt with an interference known as third order intermodulation which is similar in its effects to blanketing but different in origin. MPR urged the Commission to consider third order intermodulation in this proceeding and to adopt appropriate rules.

Issue Analysis

8. The issues to be resolved in this proceeding are:

(1) The Need for a Change in the FM Blanketing Rules;

(2) The Extent of the Blanketing Area and the Method of Calculation;

(3) The Licensee's Responsibility Within the Blanketing Area;

(4) The Responsibility of Collocated Stations;

Each of these issues will be developed separately.

Issue 1: Need for a Change in the FM Blanketing Rules

9. As indicated in the *Notice*, the present rule is ambiguous as to the definition of blanketing and the licensee's responsibility to correct it. The Commision believes that the specificity contained in the proposed rule benefits both the applicant and the listening public. By defining a specific area of responsibility, the applicant can perform a cost-benefit analysis of the proposed antenna site before construction and before commencement of program tests and can then make an educated decision as to the appropriateness of that particular site. By counting the homes within the proposed 115 dBu contour, the applicant can find a reasonable estimate of the expected cost of eliminating the interference. The people within this area would also be assured of being able to continue receiving existing stations. Finally, elimination of the ambiguity contained within the current rule will reduce the likelihood of arguments and litigation.

10. The National Association of Broadcasters (NAB) points out that the proposed rule appears inconsistent with Section 73.315(b) which urges applicants to locate as near the center of the city of license as possible. Such areas have high population densities, and create a large number of possible blanketing interference cases. Section 73.315(b) of the Rules is not proscriptive. Rather, it sets forth various factors to be considered by an applicant in selecting a transmitter site. Consistent with our other actions herein, we believe it is appropriate to amend Section 73.315(b) to incorporate our concerns on blanketing interference. This is not to say the Commission will reject any application which specifies a downtown antenna site, but we will urge applicants to actively consider blanketing interference when choosing an antenna site and to design stations that minimize such interference.

Issue 2: Blanketing Area and Method of Calculation

11. The use of the 115 dBu contour as the definition for the blanketing area was first proposed in the AFCCE petition. Most commenters agreed with its use; however, some were critical of the method proposed to calculate the contour. As discussed earlier, the Commission proposed using the inverse

distance method, based on maximum permitted facilities, applied to the main radiation lobe in the horizontal direction only (see *Notice* for a complete discussion). This method ignores the vertical radiation pattern of the antenna and does not account for antenna height. The *Notice* stated, as did many commenters, that very high antenna heights normally tend to lessen blanketing interference and their use should be encouraged.

12. Notwithstanding the opposition found in the comments, the Commission continues to believe that the original inverse distance calculation proposed in the *Notice* will ensure that all valid complaints are satisfied. The simplicity and certainty contained within this equation renders it more advantageous than considering actual antenna vertical patterns. Thus, the question of who lies within the area of responsibility becomes a simple issue. Any other method of prediction fosters debates over actual versus theoretical antenna patterns, leading to ill-defined areas of responsibilities. Finally, the needs of the listening public must rank high in this decision. Even though the method being adopted to calculate the 115 dBu contour may extend the area of responsibility somewhat, it will assure that a minimum number of FM listeners are affected by new stations. Stations that are truly not causing interference will feet no impact by these actions.

13. The National Radio Broadcasters Association (NRBA) believes that when an antenna with horizontal directivity is used, it would be more appropriate to calculate the 115 dBu contour using the ERP "in the pertinent horizontal direction" and requested an appropriate modification of the proposed rule. This is a more realistic depiction of a directional antenna's contour and the rule will be amended accordingly. Also, we believe it appropriate to consider the effect of beam tilt on the calculation of the 115 dBu contour. By employing the formula given in the *Notice*, stations using beam tilt would calculate a 115 dBu contour with less area than that intended by the formula. Therefore, instead of calculating the contour using the ERP in the horizontal direction only, calculations will be made using the maximum ERP of the main radiated lobe regardless of orientation.

14. By continuing to use the inverse distance method to calculate the 115 dBu contour, the Commission creates an additional consideration for FM station applicants. Since the area of responsibility will probably be greater than if other predictive methods were used, it becomes even more essential for applicants to design stations which minimize the potential of blanketing interference. By accordingly amending § 73.315(b), the Commission urges applicants to consider the trade-offs involved in selecting sites that will minimize interference.

Issue 3: Licensee's Responsibilities

15. The *Notice* proposed that all licensees be required to satisfy all blanketing interference complaints without cost to the complainant. This requirement did not include those complaints outside the realm of reasonableness, such as, malfunctioning or mistuned receivers, improperly installed antenna systems, use of high gain antennas or antenna booster amplifiers and non-RF devices such as tape recorders or hi-fi amplifiers (phonographs).

16. New applicants should choose antenna sites which balance the need to provide the requisite signal to the city of license while minimizing blanketing interference. Ideally, the site will be sparsely populated. To encourage such site selection, the rule will place full financial responsibility for correcting complaints within the blanketing area on applicants who commence program test authority on or after January 1, 1985.

17. Although the majority of interference situations should occur within the defined area, some isolated interference may occur beyond the blanketing area perimeter. For such complaints, licensees and permittees are expected to cooperate with complainants by providing technical assistance in determining the cause of the problems and providing advice on corrective measures. Stations, however, have no financial obligation to resolve such problems.

18. One commenter, Maine Radio and Television Company, urged the Commission to adopt the alternative site showing, as proposed in the original AFCCE petition. It was the view of the Commission during the *Notice* that placing full financial obligation on applicants renders the showing unnecessary as applicants are in a better position to weigh their trade-off decisions than the Commission. This viewpoint has not been changed and, therefore, the showing shall not be required.

19. Comments received in response to the *Notice* urged the Commission to grandfather existing stations. This would leave existing stations subject to the present rule which places responsibility on stations to satisfy all complaints. As stated earlier, the Commission believes too much ambiguity exists in such a rule. Therefore, the rule will be amended to delete the ambiguity but leave the intent intact.

20. The new rule will require existing stations to provide technical assistance to complainants. This entails the providing of information on the cause of the interference and also providing information on proper corrective measures. Incorporating this provision into the Rules will provide existing stations protection from a continuing financial hardship while clearly stating their responsibilities.

21. In providing protection to existing licensees against continuing financial burdens, the Commission must address the issue of how to treat modified facilities of existing stations. Since modifications to a station's antenna can create new levels of blanketing interference, the Commission believes that the existing licensee should be held responsible for any complaints arising from the installation of a new antenna. Therefore, existing stations that replace their current antennas on or after January 1, 1985, will assume full financial responsibility for the satisfaction of blanketing interference complaints within their areas of responsibility for a period of one year beginning with commencement of operations with the new antenna. A corresponding provision dealing with a major change, such as a change of power, however, is unnecessary since a major change requires a new Construction Permit. At that point, an existing station would fall under the authority of the blanketing rules for permittees.

22. Commenters also suggested imposition of a time limit on the full financial obligation of stations to correct blanketing interference. Thus, a licensee that originally located in a sparsely populated area which later becomes urbanized, would not incur the same obligation as a new station in that area. The Commission agrees. New permittees, therefore, will assume full financial responsibility to satisfy blanketing interference complaints received by the station during a one year period following the commencement of program tests. After this period, the stations will fall under the rule for existing stations.

23. Many commenters urged the Commission to apply new rules to receivers and set receiver standards. Comments stated that Docket No. 14185, which implemented the FM allocations table, was based on "receivers of good quality." The Joint Comments stated that to stray from this decision would "diminish whatever incentive exists to

develop better quality receivers." Many commenters shared this view, stating the Commission is making broadcasters responsible for deficient receivers.

24. It is not the Commission's intention to overly burden licensees by this proceeding. That is why existing stations merely have to provide assistance in resolving complaints to satisfy their obligations. Rather, it is our intent to have applicants place blanketing interference high on their priority lists when choosing antenna sites. We do not expect licensees to replace cheap, hand held radios with expensive FM tuners, but we decline to include a clause that would protect receivers of "good design only." We expect permittees and licensees to meet the intent of this rule and remedy interference. As commenters have pointed out, this is already being done by the majority of licensees today. As First Media states "Past experience has clearly demonstrated that FM licensees are fully capable of and willing to resolve those relatively few reasonable complaints of blanketing interference that are received." Likewise, the Commission declines to set receiver interference rejection standards. Government standards tend to be slow in development and inflexible in change. A more desirable situation would be voluntary standards developed by industry leaders.

25. ABC and the Joint Comments assumed in their comments that mobile receivers would be excluded from any new rules and sought verification on this assumption. The *Notice* did not discuss mobile receivers but past Commission policy has normally excluded them from consideration due to their inherent transient nature. This proceeding is no different and, thus, mobile receivers shall be excluded under the provisions of these rules.

Issue 4: Collocated FM Stations

26. As a result of Commission inquiries contained in the *Notice*, much debate was submitted within the comments concerning collocated FM stations. As a result of consideration of these comments, the following policies will be adopted.

27. A station choosing to collocate with existing FM stations shall assume full responsibility to remedy new interference complaints. This decision was widely supported in the comments and is consistent with the Commission's policy that the last station entering a market shall assume responsibility for any new interference created. Stations collocating and commencing operation concurrently shall assume joint responsibility for the rectification of blanketing complaints. This proposal was also widely supported in the comments.

28. In the *Notice*, the Commission asked whether the powers of collocated stations should be added to find the appropriate 115 dBu contour in determining the blanketing area. Many commenters opposed this position. The Commission agrees and thus decides that collocated stations shall assume financial responsibility, partially or wholly, for complaints received within their own 115 dBu contours.

29. MPR urged the Commission to include third-order intermodulation interference, which occurs within the receiver, under the scope of these rules. MPR submitted highly detailed and complex reports regarding this issue and how it relates to collocated stations. Opposing comments stated that the third-order intermodulation effect is largely a receiver problem and not manageable by broadcasters. Upon review of MPR's reports and the reply comments concerning them, the Commission has decided not to include the interference referred to by MPR as RITOIE (Receiver Induced-Third Order-Intermodulation Effect) under the scope of this Rule Making. This interference is not consistent with the definition of blanketing interference as offered in the *Notice* and will not be considered further.

30. *Regulatory Flexibility Act Final Analysis.*

I. *Reason for action.* Lack of specificity in the present Rules leaves the question of responsibility for resolution of interference ill-defined. The increasing number of FM stations and the practice of collocating higher powered stations within densely populated, center-city areas, contribute to the potential for blanketing interference. It is deasirable to have FM station applicants consider blanketing interference when designing their stations and the present Rules do not sufficiently accomplish this goal.

II. *Purpose of rules.* The new rules establish the area where blanketing can be assumed to exist and clearly define a station's responsibility for satisfying complaints of blanketing interference within this area. Also, they encourage more consideration of blanketing interference by applicants in selecting transmitter sites to minimize interference.

III. *Legal basis.* Section 303(f) and 303(r) of the Communications Act of 1934 as amended, in order that stations may operate free from harmful interference within their service areas.

IV. *Description, potential impact, and number of small entities affected.* This action would clarify the FM station licensee's responsibility for correcting blanketing interference in the area around the transmitter. The proposed rule would affect all new FM station applicants. Existing stations are not affected, they are merely being urged to follow the rule's intent. In the worst case, a permittee may have a large financial burden to rectify complaints. However, with good station design this burden could be reduced significantly.

V. *Recording, record keeping, and other compliance requirements.* Permittees commencing program test authority on or after 12/01/84, will be required to satisfy all complaints of blanketing interference within the defined blanketed area for a period of one year. After one year, they and all existing stations are urged to help in resolving complaints of blanketing interference. There are no specific record keeping requirements.

VI. *Federal rules which overlap, duplicate, or conflict with this rule.* None.

VII. *Significant alternatives not adopted.* None.

31. The Secretary shall cause a copy of this Report and Order, including the Final Regulatory Flexibility Analysis, to be sent to the Chief Counsel for Advocacy of the Small Business Administration in accordance with Paragraph 603(a) of the Regulatory Flexibility Act (Pub. L. No. 96–354, 94 Stat. 1164, 50 U.S.C. *et seq.*).

32. Accordingly, it is ordered, pursuant to the authority contained in Sections 4(i) and 303 of the Communications Act of 1934, as amended, that Part 73 of the Commission's Rules is amended effective 01/01/1985, as set forth in the attached Appendix. It is further ordered, that the proceeding in MM Docket 82–186 is hereby terminated.

32. For further information on this matter, contact Michael A. Lewis, Mass Media Bureau, at (202) 632–9660.

(Secs. 4, 303, 48 stat., as amended, 1066, 1082; 47 U.S.C. 154, 303)

Federal Communications Commission.

William J. Tricarico,

Secretary.

Appendix A

1. 47 CFR 73.310 is amended by adding a new definition for FM blanketing in alphabetical sequence in paragraph (a) to read as follows:

§ 73.310 Definitions.

(a) * * *

* * * * *

FM Blanketing. Blanketing is that form of interference to the reception of other broadcast stations which is caused by the presence of an FM broadcast signal of 115 dBu (562 mV/m) or greater signal strength in the area adjacent to the antenna of the transmitting station. The 115 dBu contour is referred to as the blanketing contour and the area within this contour is referred to as the blanketing area.

* * * * *

2. 47 CFR 73.315 is amended by revising the headnote and paragraph (b), by removing paragraph (e), and by redesignating current paragraph (f) as paragraph (e) as follows:

§ 73.315 FM transmitter location.

* * * * *

(b) The transmitter location should be chosen to maximize coverage to the city of license while minimizing interference. This is normally accomplished by locating in the least populated area available while maintaining the provisions of paragraph (a) of this section. In general, the transmitting antenna of a station should be located in the most sparsely populated area available at the highest elevation available. The location of the antenna should be so chosen that line-of-sight can be obtained from the antenna over the principle city or cities to be served; in no event should there be a major obstruction in this path.

* * * * *

3. New 47 CFR 73.318 is added to the Commission's Rules as follows:

§ 73.318 FM blanketing interference.

Areas adjacent to the transmitting antenna that receive a signal with a strength of 115 dBu (562 mV/m) or greater will be assumed to be blanketed. In determining the blanketed area, the 115 dBu contour is determined by calculating the inverse distance field using the effective radiated power of the maximum radiated lobe of the antenna without considering its vertical radiation pattern or height. For directional antennas, the effective radiated power in the pertinent bearing shall be used.

(a) The distance to the 115 dBu contour is determined using the following equation:

$D \text{ (in kilometers)} = 0.394\sqrt{P}$

$D \text{ (in miles)} = 0.245\sqrt{P}$

Where P is the maximum effective radiated power (ERP), measured in kilowatts, of the maximum radiated lobe.

(b) Permittees or licensees who commence program tests, replace their antennas, or request facilities modifications, and who are issued a new Construction Permit on or after January 1, 1985, must satisfy all complaints of blanketing interference which are received by the station during a one year period. The period begins with the commencement of program tests, or commencement of programming utilizing the new antenna. Resolution of complaints shall be at no cost to the complainant. These requirements specifically do not include interference complaints resulting from malfunctioning or mistuned receivers, improperly installed antenna systems, or the use of high gain antennas or antenna booster amplifiers. Mobile receivers and non-RF devices such as tape recorders or hi-fi amplifiers (phonographs) are also excluded.

(c) A permittee collocating with one or more existing stations and beginning program tests on or after January 1, 1985, must assume full financial responsibility for remedying new complaints of blanketing interference for a period of one year. Two or more permittees that concurrently collocate on or after January 1, 1985, shall assume shared responsibility for remedying blanketing complaints within the blanketing area unless an offending station can be readily determined and then that station shall assume full financial responsibility.

(d) Following the one year period of full financial obligation to satisfy blanketing complaints, licensees shall provide technical information or assistance to complainants on remedies for blanketing interference.

Appendix B

Comments to Notice of Proposed Rulemaking—Docket No. 82-186

1. Joint Comments of FM Broadcast Station Licensees
2. Harte-Hanks Radio Inc.
3. Maine Radio and Television Company
4. Consumer Electronics Group of the Electronic Industries Association
5. National Radio Broadcasters Association
6. Association of Federal Communications Consulting Engineers
7. National Public Radio
8. Vir James P.C.
9. American Broadcasting Company Inc.
10. National Association of Broadcasters
11. Viacom International Inc.
12. Corporation of Public Broadcasting
13. WROK, Inc.
14. Senior Road Tower Group
15. WUOL Radio
16. Westinghouse Broadcasting and Cable, Inc.
17. William F. Ruck, Jr.
18. J.G. Roundtree, P.E.
19. First Media Corporation
20. Cox Communications, Inc.
21. Metromedia Inc.
22. Minnesota Public Radio, Inc.

Reply Comments to Docket No 82-186

1. National Radio Broadcasters Association
2. FM Broadcast Station Licensees
3. Maryland-District of Columbia-Delaware Broadcasters Association, Inc.
4. Minnesota Public Radio, Inc.
5. The Licensees of FM Radio Stations KEEY-FM, KDWB-FM, WLOL, and KQRS-FM.

[FR Doc. 84-29947 Filed 11-14-84; 8:45 am]

BILLING CODE 6712-01-M

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47 CFR Part 73

[Docket No. 20735; RM-1301; RM-1974; RM-2655; FCC 84-515]

Changes in the Commission's Rules Relating to Noncommercial, Educational FM Broadcast Stations

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: This action resolves the final issues of a comprehensive review of the assignment and operation of FM stations located in that portion of the FM band (88–92 MHz, Channels 201–220) reserved for the use of noncommercial, educational FM service. Specifically, a Table of Assignments for this reserved spectrum will not be incorporated into the rules, but standards to minimize interference to TV Channel 6 stations from noncommercial educational FM stations will be adopted.

EFFECTIVE DATE: January 1, 1985.

FOR FURTHER INFORMATION CONTACT: Kathryn S. Hosford, Mass Media Bureau, (202) 632-9660.

SUPPLEMENTARY INFORMATION: .

List of Subjects in 47 CFR Part 73

Radio broadcast, Television.

Third Report and Order (Proceeding Terminated)

In the Matter of Changes in the Rules Relating To Noncommercial, Educational FM Broadcast Stations (Docket No. 20735, RM-1301, RM-1974, RM-2655).

Adopted: October 26, 1984.
Released: November 6, 1984.

By the Commission: Commissioner Dawson concurring in the result.

Introduction

1. The Commission has before it a *Second Further Notice of Proposed Rule Making (Second Notice)* adopted on May 13, 1982, [47 FR 24144 on June 3, 1982] and the filings made in response thereto. The proceeding was initiated by a petition filed by the Corporation for Public Broadcasting (CPB) on May 12, 1972. The petition sought a comprehensive review of the assignment

procedures and operational characteristics of noncommercial educational FM (NCE–FM) stations located within the reserved FM broadcast band (Channels 201–220).[1] The Commission has already, as part of this proceeding, adopted several rule changes to encourage more efficient use of the reserved spectrum.[2]

2. The *Second Notice* sought to resolve several technical issues regarding the potential for interference to TV Channel 6 (TV–6) stations caused by operation of NCE–FM stations. A high potential for interference to TV Channel 6 stations exists because the NCE–FM band and TV Channel 6 are immediately adjacent in frequency. TV receivers often lack sufficient selectivity to reject a strong NCE–FM signal, resulting in interference. Several parties submitted comments and reply comments in this matter. The information supplied was very useful in helping us to reach a decision in this proceeding.

3. The inquiry into this matter has included: studies to determine the abilities of television receivers to distinguish between desired and undesired signals of differing relative strengths; evaluations of various techniques to remedy the interference problems; and, development of methods to predict interference levels and locations. Numerous issues and options were considered to ameliorate the interference problem, including: development of an assignment table for NCE–FM allotments, improved TV receiver selectivity standards, collocation of FM and TV transmitters, the use of vertical antenna polarization for the NCE–FM stations, and the use of TV receiver interference filters. The Commission also developed a computer program to predict where interference is likely to occur.

4. The solution being adopted today rejects as impractical an NCE–FM assignment table and mandated improvements in TV receivers. However, the solution does permit wide latitude for NCE–FM applicants to "engineer in" their stations to take advantage of all available interference reducing methods. In this way, NCE–FM service can be provided without substantial interference to TV Channel 6 stations.

[1] Although noncommercial educational FM stations may operate on Channels 221–300, this proceeding is only concerned with those operating in that portion on the FM band reserved for their use, Channels 201–220.

[2] See *First Report and Order* (43 FR 25821 published on June 15, 1978) and *Second Report and Order* (43 FR 39704 published on September 6, 1978).

Issues

5. There are five basic issues to be resolved in this matter:

(1) Should there be a table of NCE–FM allotments and powers?
(2) How effective are the various interference remedies?
(3) What is the appropriate level of interference protection?
(4) How should interference be predicted?
(5) What solution should be adopted?

Each issue will be developed separately.

Issue 1: NCE–FM Table of Allotments

6. Among the issues raised in the *Second Notice* was the feasibility of an assignment table for the noncommercial educational FM band. The *Second Notice* indicated that the Commission questioned the benefits of such a table. Most comments also reflected this skepticism. For example CPB, the organization that originally requested a table, now believes that any benefits to be gained from a table have been lost with the passing of time. Many commenters noted that within the largest markets, little spectrum remains to be allotted, and that the area with available spectrum are better served by the demand system. Accordingly, we will not adopt an assignment table for NCE–FM stations.

7. Another aspect of this issue concerns the maximum power levels for stations within the reserved portion of FM band.[3] Currently, these stations have no specified power and antenna height limitations. The rules only state that facilities requested above the commercial limits "will not be necessarily granted." The *Second Notice* proposed to adopt the same power and antenna height limits as the commercial classifications. Comments regarding this proposal were supportive, and no other limits were suggested. Therefore, the commercial power and antenna height limitations will be adopted as the standard for NCE–FM stations also. [See BC Docket No. 80–90; 48 FR 29486 on June 27, 1983]. Any existing NCE–FM stations that are already at greater facilities than the commercial maximums will be grandfathered.

Issue 2: Interference Remedies

8. *TV Receiver Selectivity Standards.* In the *Second Notice,* we discussed at length the ability of television receivers, when tuned to Channel 6, to reject unwanted NCE–FM signals. The Commission noted that much of the interference resulted because of the inability of television receivers to reject adjacent channel interference adequately. Public radio interests agreed and argued that the problem could be solved by the use of more selective TV receivers. Others stated that although improved rejection capability would help, receiver standards would not "cure" the most severe cases of interference.

9. At the outset we would again point out that receiver improvements clearly do not represent a short-term solution to the problem. Therefore, in the first instance we are relying on the assignment standards outlined in Issue 5 and to the extent those solutions are satisfactory, as we predict, government mandated receiver standards will not be required. Nevertheless, it is clear that over the long term, better receiver selectivity would reduce problems. At present, the EIA/CEG (Electronic Industries Association/Consumer Electronics Group), with Commission participation, is involved with developing voluntary standards specifically addressing the TV Channel 6 interference problem. The Commission considers this work essential because insufficient information is now available to allow the drafting of such standards. The EIA Committee should fill that void by providing guidance for improved receivers. If the industry, for whatever reasons, is unable or unwilling to set its own receiver standards, it may be necessary for the Commission to step in. While we would be reluctant to do so, it is clear that we have the statutory ability, and we will exercise that authority if necessary. [Pub. L. No. 97–259, 96 Stat. 1087, 1091–92, September 13, 1982, 47 U.S.C. § 302(a)(2)]. The Commission may, upon review, determine that voluntary compliance by receiver manufacturers with the EIA guidelines is appropriate and we may be able to begin relaxing the assignment criteria as market penetration of the improved receivers expands. Ultimately, we could also decide, for example, to provide interference protection only to those receivers meeting minimum interference standards.

10. *Collocation.* Commenters agreed, for the most part, that collocation is the preferred means of reducing interference to TV Channel 6 reception while allowing NCE–FM stations the highest possible power levels. Noncommercial FM interests were concerned as to whether or not TV–6 stations would allow them access to the TV antenna sites.

11. The *Second Notice* defined collocation as an NCE–FM station

[3] A petition for rulemaking filed by the Lunde Corporation, RM–1301, requests that the commercial FM Power limits for Class C stations be incorporated into the noncommercial FM rules. This topic is addressed in this rulemaking and, therefore, this petition is being dismissed as moot.

locating its transmitting antenna within one mile of a TV Channel 6 transmitting antenna. Most commenting parties argued that the one mile limit for collocation was too great. A study conducted for the Joint Comments determined a distance of 0.4 kilometers (0.25 mile) to be more appropriate.[4] Locating beyond this point, the study noted, "causes FM field strengths up to 12 to 13 dB above the threshold to cause interference." Therefore, based on the data submitted, we shall adopt 0.25 mile as the definition for collocation.

12. Although some suggested lower power levels than proposed in the *Second Notice*, the proposed values for collocated NCE–FM stations will be used. We believe that the power levels proposed offer satisfactory protection given the undesired-to-desired (U/D) rejection ratios cited in the *Second Notice* for each of the lower channels. Also, if there is a problem with a particular channel not affording adequate protection, as some comments alleged, any resulting interference can be alleviated by the use of other remedies. Further, the FM station still has an obligation to assist in satisfying complaints or reducing power.[5]

13. *Vertical Polarization.* A question was raised in the *Second Notice* as to the interference reducing benefits of NCE–FM stations to operate with vertical polarization. The majority of commenters supported vertical polarization as a means of minimizing interference. A study, submitted in the Joint Comments, determined the advantage to be expected by vertical polarization of an FM transmitting antenna. The Joint Comments proposed a figure of 16 db power allowance for FM stations employing vertical polarization and locating in rural areas, and a 10 db allowance for urban areas.

14. Although data on the effects of vertical polarization on NCE–FM coverage are scanty, the record supports allowing it as a means of avoiding NCE–FM stations interfering with TV–6 stations. The Commission, therefore, will permit its use and allow the effectiveness of vertical polarization to be proven in actual situations.[6] This rule change will provide NCE–FM stations with additional flexibility for minimizing interference problems. However, the record failed to contain detailed information on the effects of vertical polarization on the coverage areas of NCE–FM stations. Additional experimentation is encouraged in this area.

15. *Receiver Filters.* The *Second Notice* proposed that external filters attached to the TV receiver could provide as much as 20 dB protection on the higher channels. All commenters rejected this figure. Interestingly, some claimed better results while others indicated worse. Proponents of filters submitted frequently response curves of several filters showing as much as 60 dB attenuation of the interfering signal. They submitted case studies claiming success in eliminating nearly all cases of interference with the installation of filters costing $10.00 or less. In short, proponents claimed that filters do work, have worked in the past, and should be considered in any rules the Commission adopts.

16. Opponents of filter use submitted similar comments but drew opposite conclusions. The National Association of Broadcasters (NAB) submitted a major study which showed not only substantial attenuation of the interfering FM signal when using filters, but also a degradation (3–10 dB) of the TV–6 aural carrier and the color subcarrier. Opponents also stated that effective filters are only available for TV receivers having 75 ohm coaxial cable inputs (currently comprising 15–20% of the market). They claimed that an effective filter program would be excessively costly to the NCE–FM stations and/or the public. Thus, the opponents of filters believed that the marginal improvements in TV signal quality do not outweigh their financial burdens.

17. As experienced throughout this proceeding, the information on filters was again contradictory. Thus, we cannot adopt, with any degree of confidence, the proposed 20 dB improvement for filters outside a laboratory environment. By adopting flexible standards, however, we could let actual field situations resolve this question. Thus, we will leave it to the judgment of the NCE–FM applicant whether filters provide a viable option.

18. *Miscellaneous Solutions.* The Commission also notes that the NCE–FM applicants have many options for minimizing the interference to TV–6 stations. For example, the NCE–FM station could locate its transmitter so that the area of interference is in unsettled, or sparsely settled, areas.[7] The NCE–FM permittee may replace a lost, or severely degraded, TV–6 signal by providing a TV translator in the affected area(s). They may also wish to take into account the direction of TV receiving antennas and locate the NCE–FM transmitter site so as to minimize interference. On this point, the Joint Comments were especially instructive in pointing out that there are a panoply of interference reduction techniques available. It is our intention to prepare an Office of Science and Technology (OST) Bulletin to provide guidance on those techniques. Finally cable penetration, or other factors that might lower the numbers of TV–6 viewers affected may be considered.

Issue 3: Level of Interference Protection

19. To adequately evaluate this issue, we examined the record to note whether the interference problem between the NCE–FM stations and TV–6 stations is sufficiently widespread to warrant new assignment standards for NCE–FM stations. The basic assertion that NCE–FM stations can cause interference to TV–6 stations is unquestioned. The extent of that interference, however, is not well defined. Several case studies were filed by TV broadcast stations, most notably KOIN–TV, Portland, Oregon, which detailed a large number of public complaints. At the same time, many NCE–FM stations indicated few complaints have been received, and they claimed that most cases were easily rectified with the use of filters at the television receivers. National Public Radio (NPR) conducted a survey of its member stations asking them to define the extent of their interference. The majority believed it to be either non-existent or very limited. However, a sample of the Commission's Field Operations Bureau's files indicated that the problem, while not universal, can be severe in isolated cases and thus result in large numbers of complaints.

20. Noting the relatively few cases of interference with over 1,100 NCE–FM stations on the air, the Commission finds that the restrictive facilities contemplated by the *Second Notice* are not justified. However, we cannot ignore the fact that NCE–FM stations have the potential to cause severe interference to TV–6 stations.

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[4] Joint Comments submitted by a group of television industry representatives formed to study the impact of Docket 20735. This group, working with educational FM representatives, conducted technical studies and submitted their results as the "Ad Hoc Committee Report."

[5] The responsibilities of the FM permittee under program test authority will be discussed in detail later in this report.

[6] In addition to allowing vertical polarized NCE–FM antennas, we will also permit the vertical component of radiation of circular polarized FM antennas to exceed the horizontal component of radiation. Thus, the optimum mix of vertical to horizontal components can be selected to meet individual circumstances.

[7] In this regard, a companion proceeding which examined the interference experienced by TV and FM receivers in close proximity to transmitter sites ("FM blanketing") has made rule amendments to encourage this option. See *Report and Order* in BC Docket No. 82–186 also adopted this day.

21. The *Second Notice* proposed standards based on differing undesired-to-desired (U/D) rejection ratios for Channels 201–220. The ratios were chosen to provide "just perceptible" interference to a "passable" TV picture quality of −65 dBm signal strength.[8] The TV–6 interests, rejecting this figure, were concerned that more than "just perceptible" interference could be caused to "fine" or "excellent" pictures. No data was presented, however, to alter our view that "fine" or "excellent" pictures could tolerate somewhat more than "just perceptible" interference without serious picture degradation. Therefore, we will use the −65 dBm signal strength universally as the basis for our interference standards. We recognize that TV–6 viewers, depending on the strengths of their TV–6 and NCE–FM signals, will experience differing degrees of loss in picture quality.[9] However, the record shows that the NCE–FM stations should be able to remedy most of the viewer dissatisfaction through application of corrective techniques. In the extreme case, the NCE–FM station would have to reduce power or terminate operations.

Issue 4: Interference Prediction

22. Many commenters were critical of the "effective interference" approach proposed in the *Second Notice* and noted that the TVINT program did not include the necessary functions to compute the true impact of interference.[10] A report submitted by the Joint Comments notes that the user of the computer program is responsible for the assumptions necessary to predict service and interference in both the manual and automated process. Therefore, it claims the TVINT program does not offer any advantages to the traditional method. Furthermore, the report states that effective interference is undermined by several technical defects, such as, the assumption of a zero correlation coefficient for location and time based on path differences between the desired and undesired signals. Finally, it argues that the inability of TVINT and effective interference to denote what area will experience interference is a step backward from the traditional method which does.

23. Additional comments from TV–6 interests stated the effective interference model constitutes a distorted view of reality. The Joint Comments used the TVINT program to analyze existing situations. It showed marked differences in the square mileage of interference predicted using effective interference, traditional method, and field study. Noting these differences, commenters claimed that the facilities proposed would cause interference in excess of that predicted using the TVINT and effective interference model.

24. The NCE–FM commenters also discussed the deficiences of the TVINT program. CPB stated that the program lacks essential items such as: the population within TV Channel 6's Grade B contour, the availability of the TV Channel 6 programming from alternate sources, or whether the FM signal is vertically polarized. Some commenters argued that the model is only a good mathematical exercise, but does not describe areas with a high probability of interference.

25. The Commission recognizes that the TVINT program is not all encompassing (as with any model). However, the primary advantage of the TVINT program and the effective interference concept is that all locations susceptible to interference can be taken into account. The traditional method only considers an area wherein 50% or more locations are predicted to receive an interfering signal. Therefore, it does not account for the loss of service throughout the whole Grade B service area. Also, a location inside the traditional interference area may be receiving better TV–6 service than expected and would not lose service as predicted. Therefore, the traditional method only begins to state where interference may occur. In addition, it usually does not include items such as population, alternative services, etc.

26. The Commission finds the effective interference method offers a more accurate prediction of the total area that will receive interference for a specified probability of service. In this case, the TVINT program predicts a statistical probability of service and interference. It was not designed to judge the reasonableness, accuracy, or honesty of the data supplied by the user. Making the user responsible for these assumptions allows flexibility to look at the relative effects of different station facilities in a short period of time. Also, TVINT is capable of considering population if the user chooses to provide the data. Further, we expect any attempt to devise an acceptable correlation coefficient for location and time differences between the TV and FM signals would not only be unreliable but would tend to understate the amount of interference predicted. For these reasons, we continue to believe the effective interference model and the TVINT program to be the best method for predicting the total interference effect.

Issue 5: The Solution

27. The *Second Notice* proposed to minimize the interference to TV–6 stations by limiting the power of NCE–FM stations. Using the TVINT computer program, a value of effective interference was chosen which would limit interference but still allow authorization of some non-collocated NCE–FM stations.[11] The Commission proposed a figure of 0.3 square miles of effective interference as accomplishing this goal. Using the 0.3 square mile figure, maximum facilities for NCE–FM stations located at various distances from the TV–6 station were proposed.

28. CPB, NPR, and others argued that permitting only 0.3 square miles of allowable interference was unduly restrictive. These commenters cited the figures given in the *Second Notice* showing that 40% of all applications on file would be affected, not to mention the impact on future applications. Their positions were that two adjacent television channels (low band) located at the minimum distance separation of 60 miles and operating with maximum facilities would cause 1,098 square miles of mutual effective interference. They argued that the NCE–FM band should be considered an upper adjacent channel to TV–6; thereby, they claimed that the FM stations should be allowed more than 0.3 square miles of effective interference.

29. Because the attenuation for band-reject filters appeared excessive at 20 dB (see paragraph 17), further computer studies were made for various effective interference levels using a more conservative 5 dB general allowance for various remedies.[12] The three areas of

[8] Definitions for picture quality are found in *Engineering Aspects of Television Allocations* Report of the Television Allocations Study Organization (TASO) to the Federal Communications Commission, March 16, 1959. A "passable" picture is of acceptable quality with no objectionable interference.

[9] The aural signal of the TV–6 station may also experience some degradation. This was taken into account since the U/D ratios are based on interference to picture or sound, whichever occurred first. See FCC/OST Lab Report No. 79–01 (Tests of TV Receivers for *"Just Perceptible" Interference to TV Channel 6 from Educational FM Signals*), September, 1979.

[10] TVINT is a computer program developed for the prediction of interference. It is capable of predicting interference by the traditional method or by the effective interference method. See FCC/OST Report No. TM 82–2 titled *"A Program to Calculate Effective Interference"*, July, 1982, by Harry Wong.

[11] The studies of the *Second Notice* used the U/D ratios based on a signal strength of −65 dBm and allowed 20 dB attenuation for band reject filters.

[12] Using the TVINT program the following runs were made:

Continued

effective interference considered were 0.3, 1.0, and 3.0 square miles. Using the TVINT program, we determined where "Low Power" and small "Class A" NCE–FM stations would not be able to locate.[13] The results showed that if the 0.3 square mile of effective interference was adopted, not even a low power (100 W and 100 feet) NCE–FM station could locate within the Grade B service area of a TV–6 station (approximately 12,000 square miles for each of the 50 TV–6 stations now operating). Only marginal improvements in availability were found for an effective interference area of 1.0 square mile. Adoption of either of these figures would essentially prevent NCE–FM stations from locating east of the Mississippi River. Only the 3.0 square mile figure offered any potential of permitting additional NCE–FM stations to be established.

30. The Commission, in the *Second Notice*, recognized that "[i]t is necessary to strike a balance between the conflicting goals of limiting TV Channel 6 interference and providing for a viable educational FM service."[14] The 0.3 square mile of effective interference was chosen as satisfying this goal. However, we now know that adopting standards based on this amount of effective interference would effectively preclude any new NCE–FM service within most, if not all, populated areas. Given that most TV–6 stations' Grade B contours cover approximately 12,000 square miles, the Commission finds that 3.0 square mile of effective interference does not appear excessive. To base the new standards on less than 3.0 square miles of effective interference would curtail the NCE–FM service to a greater degree than can be justified by the record.

31. Conversely, permitting more than 3.0 square miles could result in interference to too many people. Several comments pointed out that the amount of permissible interference should be based on population rather than area. The Commission must reject this suggestion because it could lead to arguments on interference areas, population counts, and gain versus loss benefits. These are the very issues that make the AM processing so time consuming and cumbersome. However, we do agree that the analysis is not complete until the impact on TV–6 viewers is better defined. Wishing to translate 3.0 square miles into number of viewers, the Commission determined the number of TV households per square mile for the "Area of Dominant Influence" (ADI) of 48 TV–6 stations.[15] We found that the number of TV households per square mile ranged from a low of 1.5 TV households/square mile for Hayes Center, Nebraska to a high of 276 TV households/square mile for Philadelphia, Pennsylvania. Our examination yielded a median number of 63 TV households as losing service for 3.0 square miles of effective interference. Rather than adopting standards to account for the worst case, the median figure will be used as representative; although, unique instances may require case-by-case analysis of what may be considered excessive interferences. Further, this figure is substantially less than the population (between 1,000 and 3,000 persons) that was submitted as acceptable by the Joint Comments.

32. Having established the allowable interference level, we may now proceed with development of the solution. Because collocation of the NCE–FM and TV Channel 6 transmitters is highly desirable, the new rules provide an incentive for collocation. As stated earlier, stations will be considered collocated if their antennas are within 0.25 mile. NCE–FM stations that choose to collocate will be permitted relatively large facilities as compared to other locations within the TV Channel 6 Grade A or Grade B contours. The specific power levels authorized are shown in Appendix A, Table A. Interference to TV–6 stations should be minimal if the NCE–FM station operates at the recommended level. However, since we cannot be certain that a few serious cases could not occur, we reserve the right to deal with such instances on a case-by-case basis which may necessitate, as one option, a reduction in power below the Level 1 values.

33. Non-collocated NCE–FM stations will be restricted in power based on their frequencies (channels), distances from the TV Channel 6 stations, and TV–6 facilities. The extent of the power restriction zone will end at 140 miles from the nearest TV Channel 6 station.[16] Basically, two power levels will be permitted for each station, a recommended level (Level 1) and a maximum level (Level 2). For stations on Channels 201–206, the Level 1 and Level 2 powers will be equal due to the greater potential of these channels to cause interferences to TV Channel 6. Any NCE–FM station unable to resolve its interference problems may be required to significantly reduce power, even down to Level 1.

34. The permitted Level 1 powers may be determined from Appendix A, Table B. The value in Table B must then be adjusted for the frequency of the proposed station by the value shown in Appendix A, Table C. The final calculated effective radiated power is that power which should cause interference to no more than 3.0 square miles of the TV Channel 6 service area. Although NCE–FM applicants or permittees assume no financial responsibility at this level to correct interference problems, the power level assumes application of 5 dB of remedies which are left to the NCE–FM applicant's choice (e.g., prudent location of the FM transmitter).

35. NCE–FM stations requesting Channels 207–220 will also be permitted a higher power level (Level 2). These values also appear in Table B and must be adjusted by the values in Table C. It is expected that several of the available remedies can be employed at the Level 2 power to eliminate interference to the TV Channel 6 stations. NCE–FM stations choosing this higher power level will assume full financial responsibility for eliminating all cases of interference. This may be accomplished by application of remedies, such as, vertical polarization of the FM antenna, installation of a TV translator, etc.

36. No stations will be allowed to be constructed in areas in which the recommended power level would be less than 100 watts. This is an annular area about the TV Channel 6 transmitter, usually within the Grade B contour. Because stations applying for Level 2 powers may be required to reduce to Level 1 powers, Level 1 powers must be at least 100 watts. The 100 watt minimum is consistent with the Commission's belief that stations operating below this level are not

a. TV–6 facilities were set at 100 kW and 1000 feet HAAT, no vertical pattern was assumed, and average terrain roughness was used.

b. Two sets of NCE–FM facilities were set at: 1. a minimal sized station of 100 Watts and 100 feet HAAT, and 2. a small sized station of 3 kW and 328 feet HAAT; no vertical pattern assumed, and average terrain roughness.

c. Set 1 and Set 2 runs were made for Channels 203, 211, and 217.

d. Protection Ratios, R(Q), of −6.5, −26.0, and −34.0 for Channels 203, 211, and 217, respectively were chosen.

e. The separation distance was varied for all runs from 1 mile to 140 miles.

[13] For the studies, we selected the minimum power (100 W) and the smallest class (3 kW @ 100 meters) permitted commercial stations. The greater facilities of the larger commercial classifications would have less availability.

[14] See *Second Notice* at paragraph 19.

[15] *1983–1984 ADI Market Guide for Television*, Arbitron Ratings Company, 1984.

[16] Comments were submitted requesting reduction of the 140 mile separation distance. However, it is possible for a full powered FM station on Channel 201 to cause interference at distances slightly greater than 140 miles. Therefore, the 140 mile limit will be adopted.

spectrally efficient. Although the *Second Notice* requested comments on this, we have found no basis for reinstating these subminimum facilities.

37. All of the power levels calculated assume an antenna height of 100 feet above average terrain. If higher antennas are used, then appropriate reductions in effective radiated power (ERP) must be made so that the 1 mV/m contour of the NCE–FM station will not be extended beyond that for a 100 foot antenna. However, power reductions below 100 watts ERP will not be authorized to meet this requirement.

38. An NCE–FM applicant must include in its application for a construction permit (Form 340) an exhibit of where interference is likely to occur (using traditional standards or the effective interference model) and a discussion of what plans have been made to remedy this interference.[17] An applicant will be granted a conditional Construction Permit (CP) denoting that program testing can take place only in close cooperation with FCC Field Operations Bureau (FOB) offices, TV–6 stations, and local community groups. The NCE–FM station, including those operating collocated with a TV–6 station, must take corrective measures to alleviate any cases of interference before licensing. If operating above the recommended level (above Level 1), then *all* non-exempt interference within the TV–6 station's Grade B contour must be remedied. Outside the Grade B contour area, the NCE–FM stations must provide useful information on possible solutions and other services as appropriate. Under the new rules, permittees will be monitored closely by the Engineers In Charge (EIC) of FOB field offices. EICs will have the discretion to alleviate excessive interference problems by limiting Program Test Authority to a specific length of time (i.e., days, weeks, months, etc.). When the interference is within reasonable bounds the NCE–FM station must supplement its license application to indicate is compliance (noted by the EIC) with the interference reduction rules. Permittees will be exempt from resolving interference to malfunctioning or mistuned receivers, improperly installed antenna systems, use of antenna booster amplifiers, or to associated non-rf devices. (See FCC OPP Report *UHF Reception and Television Preamplifiers*, April, 1981.)

39. It must be emphasized that NCE–FM stations are being granted the ability to engineer individual situations to minimize potential interference and remedy actual problems. The options to minimize interference are left to the permittee but may, in the most severe cases, necessitate a reduction in power. Consequently, these rules should minimize interference to TV–6 stations while permitting the maximum freedom to expand the NCE–FM service. At the same time, this approach induces the educational station to minimize its total number of interference cases. The greater the interference potential caused by large facilities, the more responsibility is required by the rules. It is, therefore, in the NCE–FM applicant's interest to be very conservative in requesting facilities and to take all steps to insure minimal intererence.

40. The licensing policies for NCE–FM stations operating under the new rules will be as follows:

A Conditional Construction Permit will be issued which alerts the NCE–FM applicant to the interference reponsibilities,

Before program tests are authorized, the permittee must notify the Field Operations Bureau's field office of the steps taken to alert the local community of possible interference on TV Channel 6 reception,

Before the license is granted, the permittee must supplement the application for license with a discussion of its actions to supply information to all reasonable complaints and its attempts to remedy all cases of interference to TV Channel 6 stations, and

Before the license is granted, the permittee must submit an affidavit (noted by the EIC) that at least 2 months of program testing has occurred and all non-exempt complaints (as defined in the rules) have been satisfied. [This condition of satisfying all complaints would apply to those stations with greater than Level 1 facilities.]

Sample Calculation

41. Assume an applicant desires to construct a station on Channel 215 at a distance of 40 miles from a TV Channel 6 station. The first step in the calculation is to determine the field strength of the TV–6 station at the proposed site. A TV–6 station operating at 100 kW with an antenna height of 1000 feet above average terrain would have a predicted field strength of 63.6 dBu at 40 miles. Using that value, Table B indicates an ERP (Level 1) of −3.34 dBk (463 watts), at 100 feet antenna height. From Table C a +6 dB frequency factor may be applied. This yields a final Level 1 ERP of 2.66 dBk (1.85 kW) at 100 feet. Likewise, a Level 2 power of 17.66 dBk (58.34 kW) can be computed. If the applicant chose to use an antenna height of greater than 100 feet above average terrain (HAAT), Level 1 or Level 2 values would have to be appropriately reduced to assure that the 1mV/m contour was not extended beyond that for the 100 foot HAAT.

Grandfathering

42. The *Second Notice* proposed to grandfather all existing stations at their present facilities. It questioned whether a station should be allowed to modify its license if it did not increase the total interference, but shifted the interference to a different geographic location.

43. Most commenters generally accepted the grandfathering of existing stations. The notable exception was KOIN–TV, a TV Channel 6 station which is currently receiving interference from a noncommercial FM station. It urged the Commission to take no action which would either legitimize or perpetuate existing interference. KOIN–TV sought a policy of requiring interfering stations to make an honest engineering effort to rectify interference before receiving grandfathered status. Although we share this concern of allowing interference to continue, we decline to mandate additional burdens to existing FM licensees. We do expect, however, all NCE–FM stations to take steps (such as educating the public) to minimize excessive interference.

44. Commenters were generally opposed to the idea of shifting the interference burden from one group of people to another. TV Channel 6 interests believed it unfair to shift the interference from one geographic area to another, even if there was a reduction in the total number of people who received interference. They proposed that the affected TV–6 station be consulted whenever an educational FM station seeks to upgrade or change its facilities.

45. Upon reflection, we agree that it would be unfair to shift interference from one geographic area to another. Therefore, any upgrade or modification which will increase or shift the area receiving interference will be considered under the new rules. To permit some license modifications, however, we will permit those changes that would not aggravate the existing interference.

Miscellaneous Matters

46. In the *Second Notice*, we also proposed to eliminate an anomaly in the NCE–FM station rules. Currently, § 73.509 states that objectionable interference between two NCE–FM stations exists if the undesired signal exceeds the desired by certain undesired-to-desired (U/D) signal ratios at the desired station's 1 mV/m contour.

[17] NCE–FM stations should try to minimize interference, for example, when selecting their tower location, to the reception of low power television (LPTV) and TV translator stations operating on Channel 6; however, protection will not be required. Any LPTV or TV translator station that has to move because of interference received from a new NCE–FM station may apply for a special temporary authorization (STA) until final disposition of their license modification.

In the case of second and third adjacent channels, where the undesired signal can be stronger than the desired signal, an adjacent channel station located within the desired station's 1 mV/m contour can appear to comply with the U/D ratios at the 1 mV/m contour. However, it may actually cause excessive interference inside the 1 mV/m contour. Further, the U/D ratio appears to improve as the undesired station moves closer to the desired station's transmitter and away from the 1 mV/m contour. The *Second Notice* proposed to resolve the anomaly by simply specifying prohibited contour overlaps. Comments were supportive. Therefore, we shall adopt that option.

Summary

47. The rules contained in Appendix A reflect the need for flexibility. The record shows that there exist varying degrees of interference to TV Channel 6 reception from NCE–FM stations, and a variety of solutions available to resolve the interference. To attempt to account for all of these situations in tightly formulated standards would be unreasonable. The approach chosen allows the assignment of noncommercial FM facilities where the applicant must "engineer in" facilities that will cause minimum interference. NCE–FM applicants can choose their levels of operation and financial responsibilities based on individual circumstances. Likewise, TV Channel 6 interests can be assured of a minimum interference impact.

48. The Commission stresses that the degree that any specific technique (*i.e.*, vertical polarization, etc.) will alleviate interference has not been determined. We have left that issue to be explored by the NCE–FM applicants. Also, we do not wish to imply that various situations will be reviewed by the Commission for specific power authorizations. The exact options that NCE–FM applicants may exercise are solely their decisions. The rules only reflect the Commission's desire to ensure minimal television interference while permitting the expansion of the NCE–FM service.

49. Finally, the Commission acknowledges that the assignment standards being adopted represent an attempt to allow the industry to explore interference reducing techniques and to encourage voluntary improvements to television receivers (see paragraph 9). The Commission will monitor the effects of the rules adopted today (with specific interest in the number of complaints generated, effectiveness of remedial techniques, and establishment of voluntary receiver standards). Further, the Mass Media Bureau is directed to prepare for the Commission's consideration, no later than three years from the date of release of this order, a staff report (Memorandum, Opinion and Order) containing a recommendation whether the new rules, and specifically Levels 1 and 2 power values, are appropriate as adopted.

50. *Regulatory Flexibility Final Analysis.*

I. *Reason for action.* To prevent exacerbation of the interference problem created when a new noncommercial educational FM station operates in a Television Channel 6 service area.

II. *Objective.* To further develop the noncommercial educational FM service with minimal loss of Television Channel 6 service.

III. *Legal basis.* Sections 303(r) and 4(i) of the Communications Act of 1934, as amended.

IV. *Description, potential impact and number of small entities affected.* The rules herein adopted will provide assignment standards for noncommercial educational FM stations. These rules are expected to allow for growth in educational broadcasting services, while maintaining present Television Channel 6 service.

There is no significant impact expected on present Television Channel 6 licensees or future applicants for Channel 6 stations. These rules limit future noncommercial FM facilities located within a Television Channel 6 service area; thereby, reducing their potential to cause interference. This reduced service area could adversely affect available financial support for noncommercial educational FM stations. These new rules also permit the use of filters, vertical polarization, or other remedies, which could permit increases in noncommercial educational FM service areas.

The positive impact of the new rules would be to help the noncommercial educational FM licensee to circumvent interference problems. In sum, the adoption of these rules will generally limit the size of new noncommercial educational FM stations and make upgrading of many existing stations in Channel 6 TV service areas more difficult. However, the new rules will permit many stations on the air that would otherwise have been forbidden.

V. *Recording, record-keeping and other compliance requirements.* None.

VI. *Federal rules which overlap, duplicate or conflict with this rule.* None.

VII. *Any significant alternative minimizing the impact on small entities and consistent with the stated objective.* None.

Actions

51. The Secretary shall cause a copy of this Report and Order, including the Final Regulatory Flexibility Analysis, to be sent to the Chief Counsel for Advocacy of the Small Business Administration in accordance with Paragraph 603(a) of the Regulatory Flexibility Act (Pub. L. No. 96–354, 94 Stat. 1164, 50 U.S.C. *et seq.*).

52. Accordingly, It is ordered, pursuant to the authority contained in Sections 4(i) and 303(r) of the Communications Act of 1934, as amended, that Part 73 of the Commission's Rules and Regulations is amended effective as of January 1, 1985, as set forth in the attached Appendix A.

53. It is further ordered, that RM–1301 is denied as being rendered moot by this proceeding.

54. It is further ordered, that this proceeding is terminated.

55. For further information on this matter, contact Kathryn Hosford, Mass Media Bureau, at (202) 632–9660.

(Secs. 4, 303, 48 Stat., as amended, 1066, 1082; 47 U.S.C. 154, 303)

Federal Communications Commission.

William J. Tricarico,

Secretary.

Appendix A

Title 47 CFR Part 73 is amended as follows:

1. 47 CFR § 73.509 is revised in its entirety to read as follows:

§ 73.509 Prohibited overlap.

(a) An application for a non-Class D (secondary) station, whether for a new station or an application for a change in a station, will not be accepted if the proposed operation would involve overlap of signal strength contours with any other station whose transmitter is located more than 320 kilometers (199 miles) from the U.S.-Mexican border and operating in the reserved band (Channels 200–220, inclusive) as set forth below:

Frequency separation	Contour of proposed station	Contour of other station
Co-channel	0.1 mV/m (40 dBu)	1 mV/m (60 dBu)
	1 mV/m (60 dBu)	0.1 mV/m (40 dBu)
200 kHz	0.5 mV/m (54 dBu)	1 mV/m (60 dBu)
	1 mV/m (60 dBu)	0.5 mV/m (54 dBu)
400 kHz	10 mV/m (80 dBu)	1 mV/m (60 dBu)
	1 mV/m (60 dBu)	10 mV/m (80 dBu)
600 kHz	100 mV/m (100 dBu)	1 mV/m (60 dBu)
	1 mV/m (60 dBu)	100 mV/m (100 dBu)

(b) An application by a Class D (secondary) station, other than an

application to change class, will not be accepted if the proposed operation would involve overlap of signal strength contours with any other station as set forth below:

Frequency separation	Contour of proposed station	Contour of other station
Co-channel	0.1 mV/m (40 dBu)	1 mV/m (60 dBu)
200 kHz	0.5 mV/m (54 dBu)	1 mV/m (60 dBu)
400 kHz	10 mV/m (80 dBu)	1 mV/m (60 dBu)
600 kHz	100 mV/m (100 dBu).	1 mV/m (60 dBu)

(c) The following standards shall be used to compute the distances to the pertinent contours:

(1) The distance of the 60 dBu (1 mV/m) contours shall be computed using Figure 1 of § 73.333 [F(50, 50) curves] of this Part.

(2) The distance to the other contours shall be computed using Figure 1a of § 73.333 [F(50,10) curves] of this Chapter. In the event that the distance to the contour is below 16 kilometers (10 miles), and therefore not covered by Figure 1a, the curves in Figure 1 must be used.

(3) The effective radiated power (ERP) that is the maximum ERP for any plane on any bearing will be used.

(d) An application for a change (other than a change in channel) in the facilities of a noncommerical educational FM broadcast station will be accepted even though overlap of signal strength contours, as specified in paragraphs (a) and (b) of this Section, would occur with another station in an area where such overlap does not already exist, if:

(1) The total area of overlap with that station would not be increased;

(2) There would be no net increase in the area of overlap with any other station;

(3) The area of overlap does not move significantly closer to the station receiving the overlap; and,

(4) There would be created no area of overlap with any station with which the overlap does not now exist.

(e) The provisions of this Section concerning prohibited overlap will not apply where the area of such overlap lies entirely over water.

2. 47 CFR 73.511 is revised in its entirety to read as follows:

§ 73.511 Power and antenna height requirements.

(a) Except as provided in § 73.504 (b), on Channels 201 to 220, inclusive specified in § 73.501, no educational station will be authorized with effective radiated power less than specified in § 73.211(a)(1).

(b) On Channels 201 to 220, inclusive specified in § 73.501, no educational station will be authorized with effective radiated power greater than specified in § 73.211 (b)(2).

(c) Stations licensed before January 1, 1985, and operating above 50 kW in Zones I and I–A, and above 100 kW and in Zone II may continue to operate as authorized.

Note.—For educational stations authorized before January 1, 1985, the provisions of this Section [§ 73.511] become effective March 1, 1987.

3. A new 47 CFR 73.525 entitled "TV Channel 6 Protection" is added to read as follows:

§ 73.525 TV Channel 6 protection.

(a) Noncommercial, educational FM stations authorized as of January 1, 1985, may not make changes in operating facilities or location that result in any increase or shift in interference without considering the requirements of this section. Further, a FM station authorized as of January 1, 1985, which seeks to improve its operation may request to return to its previous, or lesser, facilities without considering the requirements of this section.

(b) An application for a FM station operating on Channels 201–220 and located at 0.4 kilometers (approximately 0.25 mile) or less from a TV Channel 6 station will not be accepted if the antenna height above average terrain (HAAT) exceeds the TV Channel 6 station's HAAT by more than 30 meters (approximately 100 feet) or the effective radiated power exceeds the following values:

TABLE A

Educational FM channel	Effective radiated power (dBk)
201	0.5
202	3.7
203	4.9
204	7.0
205	9.2
206	11.4
207	13.5
208	15.7
209	17.9
210–220	20.0

(c) An application for a FM station operating on Channels 201–220 and located more than 0.4 kilometers but less than 225 kilometers (approximately 0.25 miles and 140 miles) from a TV Channel 6 transmitting antenna will not be accepted if it exceeds the maximum facilities allowed as determined in the following steps:

(1) Calculate the distance to the authorized TV Channel 6 station by use of the method set forth in § 73.208(c) of this part.

(2) Predict TV Channel 6 field strength at the proposed FM transmitter site by use of the distance determined in paragraph (c)(1), the authorized effective radiated power (without considering beam tilt), and the antenna height above average terrain of the TV Channel 6 station, and Figure 1 of § 73.333 [F(50,50) curves] of this Part. [To avoid difficulties due to the differences in units, the curves of § 73.333 will be used for TV Channel 6 stations also. The field strength curves for FM and TV Channel 6 are identical.]

(3) Obtain, for the TV Channel 6 field strength determined in subparagraph (2), the uncorrected allowed power from column denoted ERP_1 for Channels 201–220 or ERP_2 for Channels 207–220 in the following Table B. If the TV Channel 6 field strength determined in paragraph (c)(2) does not correspond exactly with a field strength in the table, linear interpolation shall be used. If the TV Channel 6 field strength in paragraph (c)(2) is greater than 90 dBu, then the initial power shall be the value corresponding to a TV Channel 6 field strength of 90 dBu.

TABLE B

TV channel 6 station F(50,50) field strength (dBu)	Permitted FM station ERP (dBk) @ 30 Meters (100 feet) HAAT for operation on channel 211	
	ERP_1 (recommended level) (channels 201–220)	ERP_2 (maximum level) (channels 207–220)
90.0	20.0	35.0
85.0	13.5	28.5
80.0	8.0	23.0
75.0	3.0	18.0
70.0	1.0	16.0
65.0	−2.0	13.0
60.0	−6.8	8.2
55.0	−11.5	3.5
50.0	−16.0	−1.0
49.0	−17.0	−2.0
48.0	−14.0	1.0
47.0	−9.5	5.5
46.0	−4.0	11.0
45.0	0.0	15.0
40.0	14.5	29.5
35.0	22.0	37.0
30.0	30.0	45.0
20.0	47.0	63.0
10.0	63.0	78.0

(4) Add the value from the following Table C, corresponding to the requested channel, to the value determined in paragraph (c)(3). This will provide the maximum allowable ERP_1 or ERP_2 at an antenna height of 30 meters HAAT.

TABLE C

FM channel	Frequency (MHz)	Power adjustment (dB)
201	88.1	−20.0
202	88.3	−17.2
203	88.5	−14.5
204	88.7	−11.7
205	88.9	−9.0
206	89.1	−4.5
207	89.3	0

TABLE C—Continued

FM channel	Frequency (MHz)	Power adjustment (dB)
208	89.5	0
209	89.7	0
210	89.9	0
211	90.1	0
212	90.3	+0.8
213	90.5	+1.5
214	90.7	+3.8
215	90.9	+6.0
216	91.1	+7.0
217	91.3	+8.0
218	91.5	+11.5
219	91.7	+15.0
220	91.9	+18.0

(5) If the antenna height above average terrain of the requested facility is greater than 30 meters (approximately 100 feet), reduce the maximum allowable power determined in paragraph (c)(4) by the amount necessary to result in an equivalent predicted field strength, pursuant to the following procedures:

(i) The effective radiated power is reduced so that the distance to the 1 mV/m (60 dBu) contour extends no farther than it would if the station were operating with the allowable power and an antenna HAAT of 30 meters.

(ii) The location of the 1mV/m (60 dBu) contour is determined using Figure 1 of § 73.333 [F(50,50) curves] of this Part.

(iii) The antenna HAAT is determined using the procedure contained in § 73.313.

(d) The maximum facilities cannot exceed 50 kW effective radiated power and 300 meters in Zones I and Ia or 100 kW effective radiated power and 600 meters height above average terrain in Zone II. [See § 73.511 of this part.]

(e) An application for a facility operating on Channels 201–220 and located more than 0.4 kilometers but less than 225 kilometers (approximately 0.25 miles and 140 miles) from a TV Channel 6 transmitting antenna will not be accepted if the recommended level is less than 100 watts (–10 dBk) at 30 meters.

(f) An application for a facility operating on Channels 201–220 and located less than 225 kilometers (approximately 140 miles) from a TV Channel 6 transmitting antenna must include an indication of any interference to the reception of the TV Channel 6 signals by the public. When the requested facilities exceed the recommended values (see paragraph (c)(3) of this Section), the application must also include a discussion of the techniques to minimize interference that are contemplated by the applicant.

(g) A permittee, before beginning program tests, must take steps to notify the residents of the area likely to be affected of the possibility of interference and what remedies will be available. Additionally, the Engineer in Charge of the responsible FCC field office must be advised of what alleviating steps have been taken and when program tests will commence.

(h) FM permittees operating at the recommended levels, or below, have no financial obligation to remedy interference complaints; however, within the television station's 47 dBu (Grade B) contour, the permittee must investigate all separately registered and documented complaints and make a good faith attempt to identify and help resolve all cases of interference to the direct reception of the TV Channel 6 station that results from the operation of the FM station operating on Channels 201–220. Exceptions to this provision are complaints of interference due to malfunctioning or mistuned receivers, improperly installed antenna systems, use of antenna booster amplifiers, or to associated non-RF devices (such as audio amplifiers, etc). If the complainant refuses to demonstrate the impaired reception or permit the application of remedial techniques, the permittee is absolved from further responsibility.

(i) If the effective radiated power of the facility exceeds the recommended level, a license will not be granted unless all non-exempt (See subparagraph h) interference complaints have been resolved at no cost to the TV Channel 6 viewers within the TV Channel 6, 47 dBu (Grade B) contour. The distance to the television station's 47 dBu (Grade B) contour is determined by using Figure 1 of § 73.333 [F(50,50) curves] of this Part.

(j) Outside of the television station's 47 dBu (Grade B) contour, a permittee is to provide information intended to remedy interference to TV Channel 6, at the request of the TV Channel 6 viewer. The permittee has no financial responsibility to resolve such complaints.

(k) If interference is excessive and it cannot be promptly eliminated by the application of suitable techniques, operation of the offending FM station will be suspended upon notification by the Engineer In Charge (EIC) of the Commission's local field office, and may not be resumed until satisfactory actions to eliminate the interference have been taken and authority to resume operation has been received from the FCC.

(l) To minimize interference to TV Channel 6 stations from FM stations operating on Channels 201–220, the vertical component of radiation of the FM station may exceed its horizontal component of radiation, or the FM station may use only vertical polarization. The maximum ERP on any bearing will be considered the maximum ERP for any plane for licensing purposes (including vertical or horizontal polarization, beam tilt, etc.).

(m) A permittee will not be granted a station license without a minimum of 2 months operation under Program Test Authority. The permittee shall supplement the application for station license, by submitting a statement indicating that appropriate action has been taken on all complaints of interference to TV Channel 6 reception. For operation above the recommended level, the statement shall indicate that all non-exempt complaints (see paragraph (h) have been resolved at no cost to the complainants. The application shall contain a concurring statement from the Engineer in Charge of the responsible FCC field office to indicate that he/she has no objections to the granting of a station license.

(n) No application for FM Channel 200 will be accepted if the requested facility would cause objectionable interference to Channel 6 operations. Such objectionable interference will be considered to exist whenever the 15 dBu contour based on the F(50,10) curves on § 73.333 Figure 1a of the proposal would overlap the 40 dBu contour based on the F(50,50) curves in § 73.333 Figure 1, of the televison station.

§ 73.4135 [Removed]

4. 47 CFR 73.4135 is removed in its entirety.

Appendix B

Summary of Commenting Parties

Comments in response to the *Second Notice* were filed by a number of parties. Detailed comments on all aspects of the *Second Notice* were submitted by: Jules Cohen & Associates ("Cohen"), Corporation for Public Broadcasting ("CPB"), Association of Maximum Service Telecasters, Inc. ("AMST"), National Public Radio ("NPR"), Mississippi Authority for Educational Television ("MAET"), KOIN–TV, Inc. ("KOIN"), Joint Comments filed on behalf of TV Channel 6 interests, National Associations of Broadcasters ("NAB"), Capital Cities Communications, Inc., Cosmos Broadcasting Corp., also McGraw-Hill Broadcasting Company ("McGraw-Hill").

Specific comments on isolated subjects were filed by: Intercolligiate Broadcasting System, Inc., KRMA–TV Channel 6, WCDR–FM, Earlam College, Storer Communications, Taft Broadcasting Company, Federation of Community Broadcasters, National Religious Broadcasters ("NRB"), Channel 6, Inc. ("Channel 6"), and Michigan State University ("MSU").

Various general comments were submitted by: Viewers of Central Virginia, University of Northern Colorado, Friends of Public Radio,

Inc., Bux-Mont Educational Radio Association, Metropolitan Pittsburg Public Broadcasting (WQED–FM, WQEX–TV), and several existing educational and TV Channel 6 radio licensees.

Reply comments were filed by: CBS, Inc., Mohawk-Hudson, Taft, MAET, NPR, NRB, WTVR, EIA (CEG), Belo Broadcasting, KOIN, McGraw-Hill, Joint Comments, CPB, other existing radio licensees, and TV Channel 6 licensees.

[FR Doc. 84–29948 Filed 11–14–84; 8:45 am]
BILLING CODE 6712–01–M

47 CFR Part 74

[MM Docket No. 84–280; FCC 84–517]

Broadcast Remote Pickup Service; Amendment

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: This action changes the Broadcast Remote Pickup Service Rules to (1) authorize 5 kHz segments which can be combined to form a suitable bandwidths for different technologies; (2) revise authorized emission standards; (3) continue informal BRPS frequency coordination; (4) allow narrowband VHF repeaters; (5) remove usage restrictions on certain channels; and (6) eliminate requirements for guard receivers for BRPS repeaters.

This action is taken by the Commission in its efforts to relax restrictive regulations and policies and allow new spectrum efficient systems to be licensed.

The Rule changes are intended to provide broadcasters more flexibility in their choices of Remote Pickup communications systems. This action will also permit the use of new narrowband technology equipment as a means to relieve frequency congestion situations.

DATES: Effective—To be announced by separate Order.

FOR FURTHER INFORMATION CONTACT: Hank Van Deursen, Mass Media Bureau, (202) 632–9660.

SUPPLEMENTARY INFORMATION: .

List of Subjects in 47 CFR Part 74

Communications equipment.

Report and Order

In the Matter of Amendment of frequency assignment procedures in the Broadcast Remote Pickup Service to facilitate more efficient use of the available spectrum; MM Docket No. 84–280.

Adopted: October 26, 1984.
Released: November 6, 1984.

By the Commission.

Introduction

1. The Commission has under consideration a *Notice of Proposed Rule Making (Notice)* [1] adopted on March 23, 1984, and the comments and reply comments filed in response thereto, concerning a proposal to permit optional use of narrow band technologies and the Broadcast Remote Pickup Service (BRPS). The *Notice* proposed amending the frequency assignment procedures and authorized emission standards. Although this *Order* allows immediate use of Amplitude Compandored Sideband (ACSB) equipment, it by no means limits licensees to that technology nor does it preclude the use of FM technologies. For example, 2.5 kHz deviation FM communications equipment is presently in use in Europe and could also be used in the BRPS with the rule changes adopted today. This *Order* is intended to be sufficiently flexible to allow broadcasters to choose any technology best suited to their needs without further Commission action.

Background

2. Remote pickup (RPU) stations are authorized frequencies in the 153, 161, and 450 MHz bands [2] for transmission of program audio from the scene of an event back to the studio. They may also be used for communications necessary to coordinate production of program material and support technical operation. The ever increasing demand for remote pickup stations has created a growing need for spectrum to support these additional stations. Because there is not any readily available spectrum to provide relief, more efficient use of the present spectrum must be pursued. In fact, several waivers have already been granted by the Commission to allow splitting of RPU channels to provide additional services.[3]

Issues

3. The primary issues proposed in the *Notice* included:

(1) Should the Commission amend the frequency authorization procedures to include 5 kHz segments which could be contiguously combined (stacked) to provide suitable channel bandwidths for existing and new technologies?

(2) Should the authorized emission standards be revised to accommodate new technologies as they may develop?

(3) Should the present BRPS informal frequency coodination procedures continue on a voluntary basis in lieu of formal procedures?

(4) Should VHF repeaters be authorized for narrow bandwidth technologies?

(5) Should usage restrictions on certain channels be removed?

Issue 1: Frequency Authorization Procedures

4. The *Notice* proposed dividing many existing channels into discrete 5 kHz segments to provide the BRPS flexibility to combine contiguous segments into a channel of suitable bandwidth. This action would permit continued use of all current wideband FM equipment in addition to allowing users to incorporate narrow bandwidth technologies. For example, a current VHF 30 kHz bandwidth RPU channel would become a channel of six contiguous 5 kHz segments. Alternatively, channels for narrow bandwidth technologies would be immediately available by combining the appropriate number of contiguous segments to form a channel with suitable bandwidth.

5. Several commenters in opposition to the issue apparently misinterpreted the *Notice* and believed that present wideband FM operation would no longer be permitted. This is not the case. Wideband FM operation may continue as circumstances warrant. Our action provides broadcasters *the option* of operating narrower bandwidth equipment, if they desire, to obtain partial relief from the crowded spectrum in congested areas. Comments submitted by the American Petroleum Institute (API), although concerned about increased BRPS operations on the 153 MHz shared channels, endorse the 5 kHz plan if expansion of the band is deemed necessary. The Association of Maximum Service Telecasters (MST), in its reply comments, suggest that API has overlooked the potential benefits that could accrue to land mobile users from the Commission's proposals. By providing more "room" for all current and future users in the shared bands, the creation of new narrowband channels could decrease interference problems.

6. Several comments were received emphasizing the need to retain some channels with bandwidths of 25, 50, and 100 kHz bandwidths for transmission of high-quality material for on-the-air use. Although these comments may have merit for a few channels, the record indicates that dividing the remaining channels into 5 kHz "stackable" segments as proposed in the *Notice* and eliminating the present "letter group" designations on channels would be beneficial. However, licensees are expected to make efficient use of the spectrum by stacking the minimum number of segments necessary to create

[1] MM Docket No. 84–280, 49 FR 14986 (April 16, 1984).

[2] Nominal frequency bands—see Part 74.402 for specific frequencies.

[3] See *Notice* at 4.