

The Bureau of the Census recently published the weighted average poverty threshold for 1990. The threshold for one person (unrelated individual) is \$6,652.

Dated: December 4, 1991.

Edward J. Derwinski,
Secretary of Veterans Affairs.

[FR Doc. 91-29770 Filed 12-11-91; 8:45 am]

BILLING CODE 8320-01-M

Sunshine Act Meetings

Federal Register

Vol. 56, No. 239

Thursday, December 12, 1991

This section of the FEDERAL REGISTER contains notices of meetings published under the "Government in the Sunshine Act" (Pub. L. 94-409) 5 U.S.C. 552b(e)(3).

COMMODITY FUTURES TRADING COMMISSION

TIME AND DATE: 10:00 a.m., Wednesday, December 18, 1991.

PLACE: 2033 K Street, NW., Washington, D.C., 8th Floor Hearing Room.

STATUS: Closed.

MATTERS TO BE CONSIDERED: Judicial Session.

CONTACT PERSON FOR MORE

INFORMATION: Jean A. Webb, 254-6314.

Jean A. Webb,

Secretary of the Commission.

[FR Doc. 91-29876 Filed 12-10-91; 2:52 pm]

BILLING CODE 6351-01-M

NATIONAL COMMISSION ON LIBRARIES AND INFORMATION SCIENCE

DATE AND TIME: January 9 and 10, 1992, 9:00 a.m. to 3:30 p.m. and 9:00 a.m. to 4:00 p.m., respectively.

PLACE: Hotel Washington, 15th and Pennsylvania Avenue, Washington, D.C.

STATUS: Open.

MATTERS TO BE DISCUSSED:

January 9, 1992

Chairman's Report
Executive Director's Report
WHCLIS Executive Director's Report
NCLIS Administrative Matters
Library Statistics Program
International Committee Report
Library & Information Services to Native Americans Report
Commissioners' Information Sharing Session

January 10, 1992

Recognition Awards Committee Report

Plans for NCLIS Retreat
National Library Networking
NCLIS Post-WHCLIS Planning Tour, World Bank Group
NCLIS Organization Meeting
Other Business
Public Comment

Special provisions will be made for handicapped individuals by calling Barbara Whiteleather (202) 254-3100, no later than one week in advance of the meeting.

FOR FURTHER INFORMATION CONTACT:

Barbara Whiteleather, Special Assistant to the Director, 1111 18th Street, N.W., Suite 310, Washington, D.C. 20036 (202) 254-3100.

Dated: December 6, 1991.

Peter R. Young,

NCLIS Executive Director.

[FR Doc. 91-29879 Filed 12-10-91; 3:37 pm]

BILLING CODE 7527-01-M

Corrections

Federal Register

Vol. 56, No. 239

Thursday, December 12, 1991

This section of the FEDERAL REGISTER contains editorial corrections of previously published Presidential, Rule, Proposed Rule, and Notice documents. These corrections are prepared by the Office of the Federal Register. Agency prepared corrections are issued as signed documents and appear in the appropriate document categories elsewhere in the issue.

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Project Nos. 2145-021, et al.]

Hydroelectric Applications (P.U.D. No. 1 of Chelan Co., Washington, et al.); Applications

Correction

In notice document 91-28092 beginning on page 58888, in the issue of Friday, November 22, 1991, make the following correction:

On page 58894, in the first column, under 21.b., "Project No.: 111876-000," should read "Project No.: 11187-000."

BILLING CODE 1505-01-D

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Parts 803 and 807

[Docket No. 91N-0295]

Medical Devices; Medical Device, User Facility, Distributor, and Manufacturer Reporting, Certification, and Registration

Correction

In proposed rule document 91-28377, beginning on page 60024, in the issue of Tuesday, November 26, 1991, make the following corrections:

1. On page 60024, in the first column, under **DATES**, in the second line, "1991" should read "1992".

2. On page 60027, in the 1st column, in the 3rd full paragraph, in the 16th line, "of" should read "or".

3. On page 60031, in the second column, under the heading **XI. Request**

for Comments, in the second line, "1991" should read "1992".

§ 807.21 [Corrected]

4. On page 60038, in the second column, in § 807.21(a), in the fourth line, "§ 807.2(c)" should read "§ 807.3(c)".

BILLING CODE 1505-01-D

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Office of the Secretary

24 CFR Part 10

[Docket No. R-91-1568; FR-3115-P-01]

Rulemaking Policies and Procedures—Public Comment Periods

Correction

In proposed rule document 91-27298 beginning on page 57869, in the issue of Thursday, November 14, 1991, make the following correction:

On page 57869, in the third column, under **DATES**, the second line should read "January 16, 1992."

BILLING CODE 1505-01-D

NUCLEAR REGULATORY COMMISSION

10 CFR Part 13

RIN 3150-AD71

Program Fraud Civil Remedies Act

Correction

In rule document 91-22446 beginning on page 47132 in the issue of Wednesday, September 18, 1991, make the following corrections:

§ 13.9 [Corrected]

1. On page 47138, in the second column, in § 13.9(c), in the fifth line from the bottom, "for" should read "For".

§ 13.14 [Corrected]

2. On page 47139, in the first column, in § 13.14(a), in the first and fourth lines, "investigation" should read "investigating" each time it appears.

BILLING CODE 1505-01-D

RAILROAD RETIREMENT BOARD

1992 Monthly Compensation Base and Other Determinations

Correction

In notice document 91-28041, beginning on page 58718, in the issue of Thursday, November 21, 1991, make the following correction:

On page 58719, in the third column, in the third full paragraph, in the second line, "\$55,500." should read "\$55,500".

BILLING CODE 1505-01-D

DEPARTMENT OF TRANSPORTATION

Coast Guard

46 CFR Part 401

[CGD 89-104]

RIN 2115-AD47

Great Lakes Pilotage Rates

Correction

In proposed rule document 91-29256 beginning on page 63911 in the issue of Friday, December 6, 1991, make the following correction:

On page 63912, in the third column, in the table, in the third column (Estimated 1991 pilots), insert "13" after the rule as the total for "5" and "8" (District 2).

BILLING CODE 1505-01-D

DEPARTMENT OF THE TREASURY

Bureau of Alcohol, Tobacco, and Firearms

27 CFR Part 5

[T.D. ATF-319; Re: T.D. ATF-311, T.D. ATF-306, Notice Nos. 716, 403, 410, 583; 91F009P]

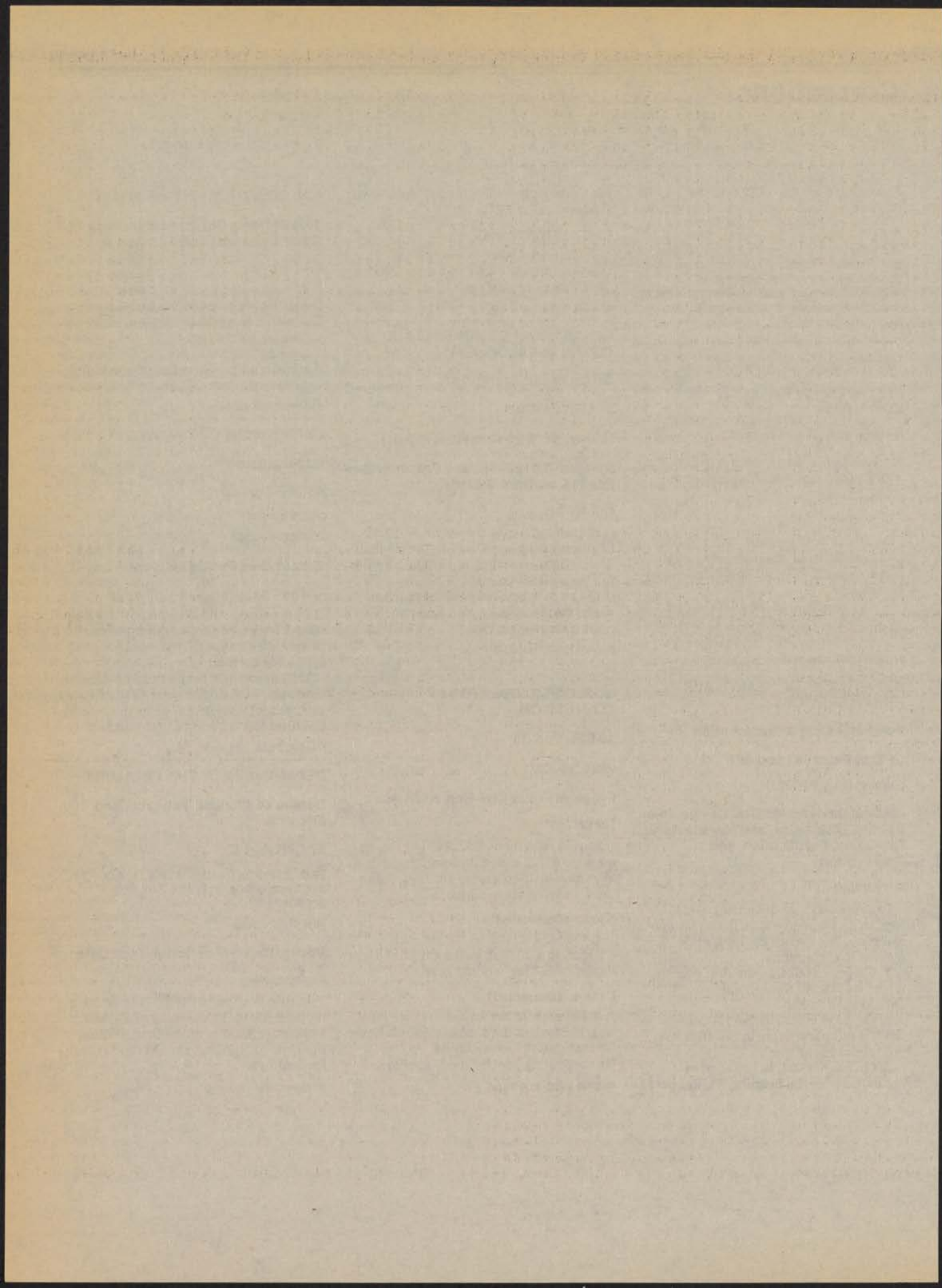
RIN 1512-AA10

Vodka: Deferral of Compliance Date

Correction

In rule document 91-29003 appearing on page 63398, in the issue of Tuesday, December 3, 1991, in the first column, the Docket Number, should read as set forth above.

BILLING CODE 1505-01-D



Part 1

Thursday
December 12, 1991

Part II

Federal Communications Commission

47 CFR Parts 2, 73, and 90
Radio Broadcast Service, AM Technical
Assignment Criteria; Final Rule

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 2, 73, and 90

[MM Docket No. 87-267, FCC 91-303]

Radio Broadcast Service, AM Technical Assignment Criteria

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: This Report and Order (Report) describes the actions resulting from the Commission's comprehensive review of the many regulatory areas which affect the AM service. The three essential and mutually supporting elements which make up the strategy proposed in the Notice of Proposed Rule Making (55 FR 31607, August 3, 1990) and adopted in substantial part in this Report are: (1) Technical Standards, (2) Migration, and (3) Consolidation. The Commission also takes several non-technical actions: (1) Permitting the issuance of tax certificates in conjunction with voluntary arrangements; and (2) relaxing the multiple ownership rules for those proposing changes in facilities that, in either case, would result in a significant reduction of interference in the existing AM band. Additionally the Commission (1) relaxes the rules pertaining to Travelers Information Stations to allow for the authorization (on a secondary basis) of such stations on any assignable frequency in the AM band; and (2) discusses voluntary receiver standards.

Certain other rule changes described in the Notice of Proposed Rule Making (Notice) were adopted in other proceedings with effective dates that were deferred pending the release of this Report. (See the Report and Order in MM Docket No. 89-46, 55 FR 32922, August 13, 1990; the Report and Order in MM Docket No. 88-510, 55 FR 32944, August 13, 1990; and the Report and Order in MM Docket No. 88-508, 55 FR 32925, August 13, 1990. The rules adopted in these proceedings are incorporated into the amendatory text of this Report. Finally, the "AM freeze" that has been in effect since last year, pending adoption of this Report is lifted as of the effective date of the Report.

In view of the undisputed public importance of the AM service, reflected in the record of this proceeding, the Commission believes that innovative and substantial regulatory steps, such as those adopted in this Report, must be taken to ensure AM's health and survival.

EFFECTIVE DATE: Contingent upon approval by the Office of Management and Budget; Notice of the specific effective date will be announced in the Federal Register when such date becomes available.

FOR FURTHER INFORMATION CONTACT: Larry Olson, Mass Media Bureau, Policy and Rules Division, (202) 632-6955.

SUPPLEMENTARY INFORMATION:

Paperwork Reduction Statement

Public reporting burden for Form 301 is estimated to vary from 72 hours to 302 hours, 45 minutes, with an average of 192 hours and 31 minutes per respondent, public reporting burden for § 73.30 is estimated to average 2 hours per respondent, public reporting burden for § 73.37 is estimated to average 7 hours per respondent, public reporting burden for § 73.3517 is estimated to average 30 minutes per respondent. These estimates include the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Federal Communications Commission, Information Resources Branch, room 416, Paperwork Reduction Project, Washington, DC 20554, and the Office of Management and Budget, Paperwork Reduction Project, Washington, DC 20503.

This is a synopsis of the Commission's Report and Order in MM Docket No. 87-267 adopted September 26, 1991, and released October 25, 1991.

The complete text of this Report and Order is available for inspection and copying during normal business hours in the FCC Dockets Branch (room 230), 1919 M Street, NW., Washington, DC, and also may be purchased from the Commission's copy contractor, Downtown Copy Center, at (202) 452-1422, 1919 M Street, NW., room 246, Washington, DC 20554.

Synopsis of Report and Order

1. This Report acts on a three-part strategy aimed at resuscitating the flagging AM radio service. Over the years, an increase in channel congestion and interference coincident with a decline in the fidelity of AM receivers has resulted in a shift of AM listeners to newer mass media services that offer higher technical quality and better aural fidelity. Nonetheless, the record established in this proceeding indicates that AM radio continues to hold a valuable place on the communications

landscape, and provides a significant number of outlets that contribute to the vital diversity of viewpoints and programming available to Americans. The Commission's goal in opening this proceeding was to facilitate an overall improvement and revitalization of the AM broadcast service, and to effectuate the necessary union of new AM spectrum between 1605 and 1705 kHz with the existing AM band (535 to 1605 kHz).

2. To provide a specific structure for these revitalization efforts, the Commission defined two models of AM station operation in the Notice of Proposed Rule Making (Notice), one for operation in the expanded band and one for operation in the existing band. Model I parameters, for expanded band stations, are intended to take advantage of the fact that there are currently no stations in the expanded band, and therefore define idealized facilities. Model I parameters include fulltime operation with stereo, technical quality competitive with FM, 10 kW daytime power, 1 kW nighttime power, non-directional (or simple directional) antenna, and a 400-800 km spacing between co-channel stations. Model II parameters, for stations in the existing band, reflect the realities in that band—particularly dense station population coupled with wide variations in: Spacing, power, antenna patterns, and interference protection—and represent those attributes toward which the service can reasonably aspire. These include fulltime operation, competitive technical quality, and wide area daytime coverage with nighttime coverage duplicating at least 15% of daytime coverage.

3. The three elements to the strategy adopted in substantial part in this Report are: (1) Technical standards, in which the Commission implements new and revised AM technical standards that should reduce over time the interference with which AM broadcasters must contend in their primary service areas; (2) migration, in which the Commission selectively opens the ten newly available frequencies in the expanded band (1605-1705 kHz) to those existing AM stations which significantly contribute to congestion and interference in the existing band; and (3) consolidation, which affords broadcasters greater latitude and incentive to reduce interference through non-technical means.

4. In the area of technical standards, the Commission most notably: (1) Increases the first and second adjacent channel protection ratios to reduce adjacent channel interference and also

to promote the development of receivers with higher audio fidelity; (2) refines the methodology of calculating nighttime coverage and interference to more accurately measure interference effects, which should lead to an improvement in nighttime reception; and (3) in some cases, requires a 10% interference reduction when modifications are made to AM station facilities, which should gradually reduce the overall presence of interference.

5. As part of the technical standards segment of this action, the Commission modifies those regulations that, by permitting a decline in the quality of existing service, no longer serve to protect the public interest. While the Commission separately addresses these technical items for the purposes of discussion, it remains acutely aware of their interrelationships and their potential impact on the AM service if considered individually.

6. First, under the category of technical standards, the Commission considers reclassification/power increases. In reaching a decision on this issue, the Commission addressed three elements that are related to the reclassification process. They are: Administrative convenience, changes to protection criteria, and changes in power level restrictions.

7. Administrative convenience, in this instance refers to the process by which the Commission, in administering the AM service, requires considerable coordination with other countries, compliance with several treaties, and participation in a complex notification process with international bodies. The Report finds that confusion would be avoided and administrative burdens on the Commission and on the industry would be greatly eased by adoption of a single classification and nomenclature system. Thus, the Commission changes the current system of AM station classification to conform to the international agreements to which the U.S. is party. Class I stations are redesignated as Class A stations; Class II and II stations become Class B; and Class IV stations become Class C. The Commission also establishes a fourth class of station, Class D, which includes stations that do not have fully protected unlimited-time operation. This last class consists of daytime-only stations, including those that operated with extended hours authorizations, namely current Class II-D, Class II-S, Class III-D, and Class III-S stations. Creation of this separate class helps to focus attention on a category of stations which has its own set of special needs.

These stations will be notified internationally as Class B.

8. Stations migrating to the expanded band will be categorized as nominal Class B facilities. Use of the term "nominal Class B" facility is intended to distinguish expanded band stations, awarded by allotment plan procedures, from existing band Class B facilities, governed by assignment procedures. Service contour protection requirements given in § 73.182 of the rules will not apply initially among nominal Class B facilities in the expanded band since the stations spacings prescribed in the allotment plan will form the basis for interference protection rights unless otherwise specified. Because of the adjacent channel relationships, contour protection requirements will apply from the effective date of this Report between stations in the expanded band on channels 1610, 1620, and 1630 kHz and stations in the existing band on 1600, 1590, and 1580 kHz. Additionally, nominal Class B stations in the expanded band are limited by international agreement to a maximum power of 10 kW, as opposed to the 50 kW limit for most existing-band Class B stations.

9. Next, in the Notice, the Commission found that most stations could be reclassified easily, but recognized that certain adjustments in nighttime protection levels for some sub-classes would be necessary. Therefore, the Notice proposed to adopt a nighttime protection level of 2.0 mV/m for all Class II-A, II-B, II-C, and III stations, noting that this would constitute an obvious improvement in protection for all but the Class II-A stations. Only one Class II-A station out of nearly 5,000 AM stations has been identified as being adversely impacted by this proposal. While it is disconcerting to adopt rules that would permit interference to this or any other station, the Commission finds that no new information has been provided that would justify altering its initial conclusion. The Commission continues to believe that the practical impact of the potential for a minor increase in interference to a single station is not of an overriding nature, especially when balanced against the overall benefits of reclassification for the entire AM service. Furthermore, the overall improved protection criteria adopted in this Report could act to offset this apparent effect. Accordingly, the Commission adopts revised nighttime protection levels as proposed.

10. As to the power level question, in order to be further consistent with international agreements, the Notice

proposed to increase the maximum power of Class B stations to 50 kW. The Notice indicated that this change would allow stations, currently limited to a power no greater than 5 kW, an opportunity to increase coverage provided that all other technical criteria are met. In practical terms, this would permit stations increased flexibility in tailoring station power and other characteristics to specific needs. The concerns of some commenters regarding additional interference that might result from this action are misplaced because any proposal for an increase in power would have to comply with all applicable interference provisions of the rules, as revised in this proceeding. Accordingly, the Commission's Rules are revised to increase the maximum power for Class B stations, conforming the domestic rules to the international agreements to which the United States is party and bringing U.S. stations to parity with those of other countries.

11. The Report next examines normally protected contours. As explained in the Notice these contours are not only important to individual stations because of their direct relationship to market value and sales price, they also serve as a basis for the Commission's determination of an application's acceptability. There are four matters to resolve at this stage. They are: (1) The Commission's tentative decision to make no changes in normally protected daytime contours; (2) the Commission's tentative decision to make no changes in normally protected contours at night, except in the case of reclassification; (3) the Commission's proposal to eliminate the exception for the first AM facility in a community; and (4) the commenters' suggestion that power increases and changes to normally protected contours are the solution to the problem.

12. The *Notice of Inquiry* in this proceeding (52 FR 31795, August 24, 1987) solicited comment on whether, weighing the current habits of the listening public, the field strength values of these protected contours should be redefined. The overwhelming majority of commenters agreed that the contours should not be changed. Thus, the Notice tentatively concluded that changing these contours would not significantly improve AM service and proposed to leave them unchanged with one exception.

13. The one minor exception to the Commission's tentative conclusion not to change the protected contours was related to the proposal to reclassify stations and adjust nighttime protection levels accordingly. The Notice proposed

to modify the baseline nighttime protection contour for Classes II-A, II-B, II-C and Class III full time stations to uniformly protect the 2.0 mV/m contour. This change would bring a measure of consistency to the new Class B category and would have a minimal impact on assignments.

14. The Report finds that adoption of the proposed value of 2.0 mV/m for the normally protected contour for Classes II and III stations at night, as set forth in the Notice, advances the objective of improving the AM service. It further concludes that modification of any other protected contour would stray significantly from the original purpose of reducing interference levels within the AM band. Because there is now a single class of station that includes the previous Class II and Class III stations, the Commission needs to pick a value suitable for protecting all of the stations in that class. A higher value, such as 5 mV/m, would expose stations currently protected to values less than 5 mV/m to more interference and a loss of service. A value of 2.0 mV/m for the normally protected nighttime contour is the highest value the Commission can select which will preserve the service of essentially all Class II and Class III stations.

15. In a related matter, the Notice also proposed elimination of § 73.37(b), which effectively is an exception to the protected contour criteria and which allows interference within the daytime 0.5 mV/m normally protected contour (up to the 1 mV/m contour) of a station that is or will be the first licensed AM station in a community. The Commission continues to believe that this rule encourages substandard operations and permits increased AM congestion and distorted service areas. Thus, the Report deletes § 73.37(b) of the Commission's rules.

16. The Report now considers E_{min} and noise. The Notice briefly discussed the relationship between the minimum usable field strength, or E_{min} ,¹ and noise, both atmospheric and man-made. The Notice also discussed various Commission actions taken in the past several years which related to noise within the AM band. The Notice tentatively concluded that there was no compelling reason to revise these factors.

17. The Commission carefully considered all of the widely divergent comments submitted with respect to E_{min} and noise, and concludes that

revision of these factors is not warranted. Selection of an appropriate minimum usable field strength value is a complex matter dependent on many variables. Therefore, while it may be true that in some areas of the country, under certain circumstances, the currently protected value of 0.5 mV/m is insufficient to provide an adequate signal, it is clear that in many areas, under other circumstances, it is an appropriate value. It is not evident, based upon the totality of the record in this proceeding, that selection of any other protected contour value would, on balance, provide a more accurate benchmark.

18. Similarly, the Commission cannot conclude from the evidence presented that the 0.1 mV/m contour is inadequate to provide Class I service. It finds that the evidence submitted not of sufficient reliability for the Commission to conclude with certainty that Class I service does not exist in many cases out to the 0.1 mV/m protected contour and thus should not be protected.

19. The intent of critical hours protection for Class I facilities has always been to provide an adequate measure of protection to the wide area service of such stations during the transitional hours after local sunrise and before local sunset when neither daytime nor nighttime propagation characteristics are fully in effect. The Commission's experience over the years has shown that the critical hours protection scheme has successfully provided a reasonable degree of interference protection for this time of day and, therefore, will remain unchanged.

20. Accordingly, the values of minimum usable field strength, E_{min} , will remain unchanged. Protection requirements for Class I facilities will also remain unchanged with respect to both daytime and critical hours protection.

21. Next, the Report examines protection ratios. The Notice proposed no change to the current co-channel protection ratio of 26 dB. For the first adjacent channel, the current protection ratio is 0 dB, groundwave-to-groundwave. The Notice proposed to change this ratio from 0 dB to 16 dB for the protection of daytime and nighttime groundwave service. Also, the Notice proposed that both groundwave and skywave service of Class I stations be protected from adjacent channel skywave interference. In this respect, the Notice proposed to modify the skywave to groundwave protection ratio from -13.98 dB to 16 dB and to include a skywave to skywave protection ratio of

0 dB, a type of interference protection not previously specified. For the second and third adjacent channel, the Notice proposed no change.

22. Regarding the co-channel protection ratio, the Commission considers the record in this proceeding to clearly indicate that no change is required. While the Commission agrees with the comments indicating that "talk" programming requires more than 26 dB of co-channel protection, with the current level of protection, high quality reception of "talk" programming is possible beyond current city-coverage signal levels.

23. With respect to the appropriate level of first adjacent channel protection, the Report first discusses the daytime groundwave service case. The Commission continues to protect service to the normally protected contours (0.1 mV/m for Class I stations; 0.5 mV/m for other classes) and will provide increased protection required for wideband reception. However, as demonstrated in the comments, the adoption of the required 16 dB of additional protection at the normally protected contour (e.g., 0.5 mV/m) would largely preclude most needed facilities modifications, thus effectively freezing the AM band at the current level of adjacent channel interference.

24. Nonetheless, adjacent channel interference is a real concern, particularly for wide band receivers, and some improvement is needed. A pragmatic solution is suggested by the many commenters who stated that a field strength of 2 mV/m is required for satisfactory wide band reception. Since that is 12 dB greater than a normally protected groundwave contour of 0.5 mV/m, a modest increase in the adjacent channel protection ratio, applied at the 0.5 mV/m contour, will serve to enhance both narrow band and wide band reception. Accordingly, the Commission is adopting an adjacent channel protection ratio of 6 dB to be applied at the normally protected contour which will, in practice, provide 18 dB or greater protection to wide band service. Although this is slightly higher than the 16 dB figure mentioned above, the Commission considers this 6 dB increase in protection to be the minimum change in protection required to realize improved reception. As improved receivers are marketed with wide and narrow bandwidth capabilities, listeners will be able to realize an improved and more competitive technical quality wherever AM improvement is achieved in practice.

¹ The value of E_{min} represents the minimum field strength necessary to permit a desired reception quality in the presence of atmospheric and man-made noise.

25. The circumstances surrounding first adjacent channel nighttime protection are significantly different from those of the daytime. The Commission's proposal for daytime adjacent channel protection represents a tightening of the existing protection standard contained in the rules which is applied in a single-signal manner. With the exception of protection to clear channel stations, no nighttime adjacent channel standard now exists. Because the Commission is concerned about the restrictive effects of creating an entirely new adjacent channel standard for nighttime operations, it has reconsidered the initial proposal of a 16 dB value. The Commission is persuaded by the commenters who argue that adoption of such a high ratio would impair the ability of stations to make needed facilities modifications. This is particularly so since the first adjacent channel standard represents a limitation where none previously existed. In order to maximize flexibility, and recognizing that scientific studies show that adjacent channel interference should be reduced in order to improve the AM service, the Commission is adopting a more moderate value of 6 dB.

26. The Commission's proposal for 0 dB first adjacent channel protection to skywave service was not opposed. However, this proposal would preclude hundreds of Class B stations from making any facilities modifications because of the extremely large skywave service areas of Class A stations on adjacent channels. Therefore, the Commission believes that this standard would be unrealistic and counterproductive and it declines to extend adjacent channel protection to Class A stations' nighttime skywave service.

27. The comments have persuaded the Commission to revise its thinking regarding the second adjacent channel protection levels. After careful analysis, the Commission is adopting a prohibition of overlap of the 5 mV/m contours of second adjacent channel stations. Such an action would insure that, within the daytime city coverage contours, full protection from second adjacent channel interference would be obtained. This standard would require station separations greater than those currently required, and is consistent with the NRSC standard.

28. No opposition was received to the proposal in the Notice to leave undisturbed the current third adjacent channel protection standard. The Commission continues to believe that this standard properly balances a station's protection and service

requirements. The Commission is maintaining the existing standard of prohibiting overlap of 25 mV/m contours of such stations.

29. Regarding nighttime interference calculations, the Notice of Inquiry (*Inquiry*) questioned whether it would be appropriate to limit increased interference from other stations by considering adjacent nighttime skywave interference in the RSS calculations and by reducing the RSS exclusion value from 50% to 25%. The reaction was mixed, but generally construed the Commission's alternatives to be an insufficient response to the considerable difficulties facing the AM service.

30. In view of the response to the *Inquiry*, the Notice proposed even tighter protection criteria. The Notice proposed to eliminate entirely the RSS "50% exclusion" methodology and to consider, instead, all signals as potential sources of interference. (In effect, the Commission proposed to use an RSS "0% exclusion" method.) Also, the Notice proposed to consider adjacent channel signals in the interference calculations. The Notice further proposed that each station's individual limitation toward any other station not exceed 1.0 mV/m, with appropriate adjustments for protecting skywave service of Class I stations. Additionally, the Notice proposed to require existing stations that already exceeded this 1 mV/m threshold to reduce their signal to other stations by 10% in order to receive an authorization to modify their facilities. Finally, although no longer required for determination of station protection under our proposal, the Commission proposed that RSS calculations (0% exclusion) would be used to evaluate city coverage of a station and to compute the ranking factor for migration preference purposes.

31. The record in this proceeding convinces the Commission that the proposals set forth in the Notice are sound, reflect the best predictors of interference and service available today, and provide a mechanism to not only prevent continually increasing interference in the existing AM band but also, in some cases, to reduce existing levels of interference. Two of these proposals are fundamental to the Commission's efforts to improve AM nighttime interference calculations. They are RSS 0% exclusion and inclusion of adjacent channel signals. It is noteworthy that the record supports these concepts. The disagreement is not with the concepts themselves but rather with the impact of their application, most notably the lack of flexibility and reduced coverage showings.

32. After further evaluation of the proposals, the Commission recognizes that a key element of these proposals, the shift to the single signal protection concept, is also most difficult to achieve without impacting the ability of some existing stations to modify their operations. The Commission agrees with commenters that the threshold level of 1 mV/m for protection purposes may be ideal, but in many instances it is impractical. The ultimate question is what is the test for significance for these types of situations. The Commission finds that a major difficulty inherent in the proposed rules relates to the need to find a specific value that would define interference as significant and trigger the need for a 10% reduction in signal level. The Commission concludes, that in a mature band such as the AM band, a single value that would represent a significant increase in interference is extremely elusive because of the many various combinations that require consideration. Also, the Commission is not convinced that the discovery of a single value would be translated into tangible benefits since the concept requires voluntary actions of stations (i.e., facilities modifications), the type and quantity of which cannot be predicted, as a prerequisite for a 10% signal reduction. Thus, the Commission is adopting a modified proposal that incorporates the basic ideas and adjusts the remaining ones.

33. The modified approach the Commission has developed adheres to its basic goal of improving the AM service by reducing or restricting increased interference. In effect, this approach provides a balance between the ideal and the pragmatic. The modified approach adopted is as follows. In the determination of nighttime interference, all skywave signals (co-channel and first adjacent channel) are considered. The single signal concept is replaced with an RSS concept that distinguishes among three significant levels of interference. First, the highest interferers are those that contribute to another station's RSS (50% exclusion); these interferers would be required to reduce their contribution to that RSS by 10% if and when they apply for a change in facilities. Second, the next level of interferers are those that contribute to the RSS (25% exclusion) but not the RSS (50% exclusion); these stations would be authorized facilities changes if no increase in radiation is involved. Finally, the lowest level of interferers are those that are no greater than the RSS (25% exclusion) and which would be permitted to increase radiation as long as the RSS (25% exclusion)

threshold is not equalled or exceeded. Essentially, the Commission has used the well-known RSS method with 50% and 25% exclusion values to classify existing co-channel and adjacent channel stations as high, medium and low interferers. High interferers must reduce interference, medium interferers may preserve the status quo, and low interferers may make modest increases. Finally, a new station may be authorized only if it qualifies as a low interferer with respect to any other station on the same or first adjacent channel.

34. The Commission turns now to the relevant concerns of the commenters and the impact of the Commission's modified approach. Three points stand out—flexibility, coverage, and noise. Of the three, flexibility is the most difficult to resolve because it requires a balance between our overall goal of reducing interference in the AM service and the understandable desire of broadcasters to improve their stations. The balance is delicate because as interference restrictions increase, flexibility decreases. Recognizing that the proposed rules would severely limit station modifications, the Commission notes that the modified approach relaxes the restrictions and is not as limiting. The Commission believes that this action may satisfy some of the commenters' concerns. Moreover, the Commission is aware that often licensees are required to make changes to their stations because of circumstances beyond their control (e.g., loss of site and antenna maintenance difficulties).² Under those circumstances, the Commission would take a close look at the facts presented and rule on the appropriateness of a waiver, just as is available under the current standards. For these reasons, the Commission believes the rules adopted today provide an appropriate balance between two desirable but conflicting needs.

35. With respect to coverage, considerable opposition to the revised RSS approach focused on the resultant reduction of predicted nighttime service which would occur when calculating new interference-free contour values for coverage purposes. It is obvious that

inclusion of additional co-channel and adjacent channel contributions would increase calculated RSS value. At the same time the Commission recognizes that a reduction in coverage, even if theoretical rather than actual, translates into an apparently reduced market and possibly reduced revenue for AM licensees. While the Commission believes it would be proper to adopt this more accurate calculation technique, it recognizes the merit in not including all signals in the RSS calculations since no convincing evidence has been presented to warrant a substantial alteration of the currently practiced method of coverage prediction.

36. Including first adjacent channel signals in the RSS calculations and incorporating the new skywave propagation model, will change virtually all nighttime interference-free contour values. Consequently, corresponding coverage maps will also change. As the Commission is maintaining a 50% exclusion for the RSS calculation, the coverage depictions for many stations should not be altered dramatically from those which existed under the previous standards. Therefore, the Commission shall not impose any requirement for a universal re-mapping of service contours. This will be left to the discretion of the individual licensee, or until such time as an application is filed for change in facilities which would itself alter the station's service area.

37. The only exception to use of the RSS with 50% exclusion for coverage purposes is the determination of an improvement factor for a station seeking to migrate to the expanded band. Because there is a need to distinguish between all stations with respect to interference caused and received, an impossibility using a 50% exclusion method, and because the practical problems associated with a reduced coverage depiction will be neither significant nor relevant to the improvement factor process, the 0% exclusion method will be utilized within the context of the expanded band migration eligibility calculations.

38. Finally, the Commission agrees that noise is certainly a factor which warrants consideration; however, based on the record of this proceeding, the Commission is not persuaded that interfering signals from other stations are less significant than ambient noise in the evaluation of the overall problem. Therefore, any solution which concentrates primarily on overcoming local noise thresholds, such as universal power increases, can only serve to exacerbate the existing problem by also raising the base interference level.

39. The Commission notes that, because Class IV stations are unique with respect to nighttime protection in that extremely large numbers share the same channel and have no specific nighttime restrictions, there would be little benefit in applying to Class IV stations the same rule changes that are being considered for other classes of stations. Thus, the rules the Commission adopts regarding nighttime interference will not apply to Class IV stations except with respect to the determination of coverage.

40. Next the Report discusses nighttime enhancement. Recognizing that daytime-only stations face serious disadvantages because of their inability to operate at night, the Commission has initiated several rulemaking proceedings that addressed this limitation on station operation and sought ways to permit fulltime operation to the maximum extent possible, consistent with sound engineering practice. Significantly, actions taken in a series of proceedings have allowed many daytime-only stations to operate during nighttime hours. In one of these proceedings, MM Docket No. 88-509 (See Notice of Proposed Rule Making, 53 FR 45525, November 10, 1988, and Memorandum Opinion and Order, 5 FCC Rcd 5192) the Commission proposed further steps to enhance the opportunity for daytime-only stations to improve their nighttime operations while at the same time maintaining existing interference protection requirements. The Notice observed the close relationship between the MM Docket No. 88-509 issues and those considered in this proceeding and concluded that the issues and record should be incorporated in this proceeding.

41. In essence, therefore, the Notice, in accordance with MM Docket No. 88-509, proposed the relaxation of current restrictions that prohibit Class II-S and Class III-S stations from establishing separate nighttime antenna systems and upgrading their nighttime operations to facilities that do not meet the minimum protected power level of 250 watts (or the equivalent 141 mV/m at 1 km). Also proposed were changes to requirements regarding minimum power, city coverage or minimum operating schedule. Proposed also in MM Docket No. 88-509 was the option of defining all such nighttime enhancement proposals as "minor changes"—even those requesting power increases.

42. Finally, the Commission proposed that unlimited-time Class II and Class III stations be allowed to reduce their nighttime power to a level below the established minimum and thus be

² The Commission also recognizes that certain circumstances that may be beyond the control of the licensee would prevent a 10% reduction because of a conflict with other Commission rules, such as those requiring compliance with minimum efficiency criteria or where specification of the standard pattern "Q" factors would not achieve proper tolerance. See 47 CFR 73.150. In such situations the Commission would allow, on a case-by-case basis, for some flexibility for exceptional cases where reduction could not be performed without the waiver of other technical requirements.

reclassified as Class II-S or Class III-S stations. Under these circumstances, the Commission reasoned that such stations would lose their rights to interference protection and that city coverage and minimum operating schedule requirements would be retained for stations which elect to make these voluntary power reductions. Comment, however, was sought on exempting such stations from the coverage requirements.

43. After a thorough review of this matter, the Commission adopts changes in the current rules to facilitate both the technical enhancement of nighttime operations by Class II-S and Class III-S stations and the overall improvement of service to the listening public. The Commission will also permit those unlimited-time Class II and Class III stations that find it advantageous to do so, to reclassify their nighttime operations as Class II-S and Class III-S and to operate under the same terms as existing Class II-S and III-S stations. The Commission believes that these changes will aid in the overall effort to permit daytime-only stations the opportunity to provide meaningful nighttime service and to provide added flexibility to fulltime stations who are suffering economic difficulties.

44. With regard to enhanced nighttime operations for Class II-S and III-S stations, the Commission will now permit such stations to increase their nighttime power from the level originally authorized to any intermediate level below 250 watts (or the 141 mV/m at 1 km radiation equivalent). Such stations will also be permitted, when they are operating below the 250-watt level (141 mV/m at 1 km), to use operating parameters which differ from their daytime antenna values and to operate these new systems at either their existing daytime or at new nighttime sites.

45. Further, the Commission has decided that applications filed by stations seeking to implement enhancement proposals will be processed as minor changes under § 73.3571(a)(2) of the rules. Section 73.3571(a)(1) of the rules defines "major change" applications as those that propose an increase in power, or a change in frequency, hours of operation or station location. The only definition in that section that is relevant to these proposals is the one regarding an increase in power. This action does not alter the basic right of parties to file informal objections under the minor change processing procedures nor does it diminish Commission scrutiny since the engineering analysis applied to

major and minor change applications is essentially the same.

46. The Commission will also permit unlimited-time Class II and Class III stations to reclassify their nighttime operations as Class II-S and Class III-S stations and to operate below 250 watts (141 mV/m at 1 km equivalent) under the same terms as existing Class II-S and Class III-S stations. Since AM applications for power reduction are currently treated as minor change applications, it would be logical to extend that treatment to these cases. Thus, such applications will be processed as minor changes under § 73.3571(a)(2) of the rules. These stations will receive no protection from interference, will be required to provide protection to unlimited-time stations, and will be exempt from meeting nighttime city coverage and minimum operating schedule requirements.

47. Additionally, the Commission will permit Class II-S or Class III-S stations to use rooftop or other unconventional antenna systems at night. Such stations may benefit from using inexpensive, short, and easily mounted antennas which are cost-effective and may promote expedited nighttime service. However, the Commission will not compromise the efficacy of its interference reduction efforts for this purpose and therefore, will require detailed engineering showings to accompany any application where such an antenna is proposed, as well as a subsequent proof-of-performance to demonstrate proper system operation.

48. The Report now reviews the issue of advanced antennas. The Notice observed that the National Association of Broadcasters (NAB) was conducting tests on new types of antenna systems that might improve the AM broadcast service. The Notice thus proposed to defer changes in the rules until testing and analysis of such systems had been completed. Initially, the Commission commends the NAB and others for their continuing efforts directed at the development of improved antenna systems for use in the AM band. The Commission encourages the continuation of these and other related antenna projects which show promise for the improvement of this service.

49. At issue is whether it is appropriate at this time to revise the Commission's Rules in order to accommodate standardized versions of either or both of the antenna systems described above for use in the AM service. As noted in the comments, results of the skywave suppression antenna have been inconsistent and the Report finds that no further Commission

action is warranted at this time. Results of the low profile antenna are more encouraging. However, Commission action on the low profile antenna at this juncture would be premature as it would be based upon a limited record of actual field test data. Accordingly, the Commission encourages further testing of this antenna design and, to the extent possible, intends to give favorable consideration on a case-by-case basis to any requests which might help develop the record of actual field test data. Commission action on a standardized version of the low profile antenna will be deferred pending the development and analysis of such a record.

50. The Report reviews split frequency operations next. Split frequency operations utilize one assigned carrier frequency during daytime hours and a second carrier frequency during nighttime hours of operation. Such operations could be attractive to daytime-only stations which are unable, due to technical restrictions, to use their daytime frequency for nighttime operation, as well as to new fulltime stations which cannot find a viable single channel for both modes of operation. Because of the greater level of complexity of split frequency operations and the potential for increased preclusion of other conventional facilities, split frequency operations should generally be disfavored. However, the Commission finds that under very special and unique circumstances, the public service arguments for authorizing such an operation may outweigh the aforementioned liabilities. The Commission will consider waiver requests where sufficient supporting technical information is submitted to establish that no preclusion to other full time stations would occur, and that the greater public interest can be achieved through issuance of such an operating authority. Nevertheless, the Commission does not conclude that adequate justification exists to create a separate body of rules to govern such operation. Therefore, the Commission amends § 73.3516 of the rules to more clearly exclude split frequency operations.

51. In summary, in this section of the decision specifically dealing with technical standards, the Commission has: (1) Adopted new first and second adjacent channel protection standards, (2) revised nighttime coverage and interference calculations, (3) allowed possible enhancement of nighttime service by certain Class D stations and, most importantly, (4) adopted a rule that would reduce interference to some stations when certain facilities

modifications are authorized. As a group, these rules should lead to a significant, although gradual improvement in AM signal quality.

52. The next segment of the Commission's strategy for rejuvenating AM service is the selective migration of existing AM stations into the expanded band. This migration offers a unique opportunity for the improvement of AM broadcasting. By adopting appropriate rules for the use of the expanded band, migrating stations will operate in a new environment where Model I service should be achievable by all stations. Furthermore, after the completion of the migration process, there should be a general reduction in interference levels in the existing band, helping achieve the goal of Model II service for existing stations. These changes should benefit all licensees and the public as a whole as the quality and perception of the AM service improves. However, the extent of improvement depends, in part, upon the selectivity of the migration process. Migration of AM stations from the existing band should reduce interference and congestion in the existing band and should offer a prompt method for establishing service in the expanded band. We now consider the various issues that must be resolved in order to accomplish these goals.

53. In this section, the Commission addresses the many issues related to the migration process. They are: (1) Wide station separations and low interference levels; (2) migration eligibility; (3) existing stations causing interference and preferred migrators; (4) allotment or assignment options; (5) sample allotment plan; (6) the selection process for migrating stations; (7) ownership limitations and transition period; (8) expanded band technical standards; and (9) city coverage for expanded band stations.

54. First the Report looks at wide station separations and low interference levels. Migration of AM stations from the existing band into the expanded band is a fundamental feature of the Commission's plan for AM improvement. In the Notice, the Commission expressed its preference for an expanded band environment which would utilize relatively wide spacings between stations to produce reasonably low interference levels. The Notice also reflected the Commission's initial reservations regarding the use of elaborate multi-tower directional antenna systems in the expanded band, stating instead our preference for nondirectional or simple directional antenna systems. In this regard, the Notice discussed the appropriateness of

the characteristics of the Model I facility for the expanded band. Consistent with this Model I definition, the Notice made a preliminary estimate that 25 to 30 stations per channel could be accommodated in the expanded band.

55. One of the Commission's goals in this proceeding is to create an expanded band environment with relatively wide station separations which would result in reasonably low interference levels. The Commission continues to believe that adherence to carefully crafted expanded band characteristics, such as the Model I parameters, is essential to accomplish this goal.

56. The parties that maintained that the Model I technical characteristics are not consistent with the Commission's service goals base their arguments on studies that assumed that our desired value for E_{nom} was to be used as the value for the nighttime interference-free contour and protected accordingly. Interference prevention in the expanded band will be based upon the station separations of the allotment plan rather than a requirement for case-by-case protection of a nighttime interference free contour as is used in the existing band. The Commission's initial calculations performed at the time of the Notice yielded predicted nighttime RSS values considerably higher than 2.0 mV/m. The initial estimate of 25 to 30 stations per expanded band channel was intended to represent the potential upper limit of the number of stations that could be accommodated per channel. Clearly, this estimate was made in an environment of considerable uncertainty with regard to many pertinent parameters. It was never the Commission's intention that the 25 to 30 station per channel estimate be viewed as a specific primary goal for the expanded band to which other considerations would be subordinate.

57. While the Commission will require expanded band operations to use at least Model I parameters, there may be special cases which warrant the authorization of other than Model I parameters. In such situations, the protection to be afforded co-channel and first adjacent channel allotments from skywave and groundwave interference in any part of an allotment area shall be equivalent to the protection afforded by Model I facilities implementing the designated allotment and will be determined on a case-by-case basis.

58. An example of a variation from the Commission's general concepts relates to the potential for allotments to be located in coastal areas. In such situations, it may be appropriate to space allotments at shorter distance

intervals and to specify a simple directional antenna system (2 or 3 towers) in order to provide full protection to all stations. The Commission does not anticipate drastic short-spacing of facilities which would require deep directional pattern nulls, but rather moderate degrees of suppression to compensate for marginally short-spaced allotments. In situations such as these, where a major lobe of the pattern could be directed out to sea, with no potential for interference, consideration could be given, on a case-by-case basis, to the possibility of 10 kW nighttime power.

59. Regarding migration eligibility, the Commission decides to restrict initial eligibility for expanded band allotments to existing AM licensees. The Commission is convinced that such a restriction is essential to achieving the level of interference and congestion reduction in the existing band which might revitalize its competitive standing. Permitting new applicants, whose use of an expanded band channel would contribute nothing to reducing interference or congestion, is simply inconsistent with these requirements. (Consistent with *Ashbacker Radio Corporation v. FCC*, 326 U.S. 327, 333, n.9 ((1945)) and *United States v. Storer Broadcasting Co.*, 351 U.S. 192 ((1956)), the Commission is permitted to restrict initial migration eligibility to existing AM stations.) The Commission also elects not to include Class IV stations as eligible migrators.

60. The Commission further decides against minority, female or educational service set-asides in the expanded band. In sum, given the level of interference and congestion in the existing band and the significant constraints imposed by quality considerations on the expanded band's capacity, the Commission does not believe set-asides or reservations for applicants which will not contribute to the improvement of existing band conditions are feasible at this time.

61. The Commission does recognize, of course, that increasing the levels of minority and female ownership promotes diversity and therefore advances the public interest. The Commission also recognizes that in some areas there may be a desire for additional public radio outlets and that existing spectrum in the FM band may not be sufficient to fulfill that desire. The difficult choices made here do not suggest any diminished concern on the Commission's part for the benefits which the existing minority and female preference policies and educational reservations have long provided. Rather, they reflect the hard reality that overall

AM improvement will require all available resources. The Commission notes, of course, that to the extent initial migration to the expanded band does not exhaust its capacity, new applicants, including noncommercial educational parties, and minority and female applicants whose comparative preferences would be fully effective, will have an opportunity to seek authorizations.

62. The Report reaches several conclusions regarding the third migration issue of existing stations causing interference and preferred migrators. First, after careful consideration, the Commission finds that revising the priority scheme through an emphasis on stations receiving interference, as opposed to stations causing interference, would be counterproductive because this would stray from the objective in this proceeding—the reduction of congestion and interference in the AM band.

63. The Commission believes that granting a preference to a station migrating to the expanded band if the station currently provides a community its only local service is not warranted. A first local service preference is, in some contexts, a sensible corollary of the Commission's obligations under section 307(b) of the Communications Act to provide a fair, equitable, and efficient distribution of radio services. In the present situation, however, the local station is already in operation. Therefore, the Commission's refusal to grant such a preference does not foreclose the availability of local service in the affected community, nor would grant of the preference in any way improve the distribution of stations.

64. In regard to making a specific allocation to TIS on 1690 and 1700 khz, this step would impair the expanded band's ability to accommodate preferred migrators. Minimizing interference to primary stations and providing maximum site selection flexibility for TIS are best achieved by opening the entire AM band to TIS.

65. The Commission continues to believe that fulltime stations that would reduce interference and congestion by moving to the expanded band represent the most beneficial migrators and that comparing improvement factors is an appropriate basis for selecting between petitioners that desire to migrate. In this fashion, the petitioner that brings the greatest relief from interference and congestion will be selected.

66. The Commission also finds the comments supporting a daytime improvement factor sufficiently persuasive to allow for altering the initial approach, as proposed in the

Notice, to some extent. The Commission is adopting a revised improvement factor scheme which incorporates a preference factor for daytime interference in addition to the proposed factor for nighttime interference. In recognition of the importance of reducing daytime interference, the Commission is adopting the same approach for calculating the daytime improvement factor that was proposed in the Notice for the nighttime, that is, the ratio of the area of daytime interference caused (co-channel and adjacent channel) to the area of daytime service provided. This method is a logical extension of the nighttime interference factor.

67. However, where nighttime interference and service is determined using the Root-Sum-Square (RSS) method, the calculation of daytime groundwave interference and service is based on the amount of contour overlap adjusted for contour protection ratios. That is, if the normally protected contour of one station is overlapped by the interfering signal of another station on the same or first adjacent channel, the amount of interference caused is equal to that portion of the overlapping area in which the ratio of the desired signal to the undesired (interfering) signal is less than the co-channel or first adjacent channel protection ratio, as appropriate. The daytime service area of a station is equal to the area within its normally protected contour less any area lost to interference as determined above. The Commission will not consider the effects of stations operating on second and third adjacent channels, both because the rules regulating second and third adjacent channel spacings permit such stations to operate close to each other (well inside the normally protected contours) and because such rules are intended to control receiver cross-modulation and inter-modulation problems and do not lend themselves to determinations of areas of interference.

68. In calculating the daytime contours, theoretical conductivity values will be used for the purpose of determining the daytime improvement factor. Although it would be possible to use measured conductivity data in connection with the contour calculations for the improvement factor, the Commission concludes that the benefits of this approach would be very minimal. In order to use such data fairly, a complete search of all available measurement data for all stations would be necessary. Even with all measured conductivity values considered, the Commission believes that, with few exceptions, the effect of the measurement data would even out and

there would be little overall impact on the ultimate ranking of prospective migrators.

69. The improvement factors for daytime and nighttime are defined as the ratio of daytime and nighttime interference caused to the amount of daytime and nighttime service that the station provides. Each improvement factor will be calculated independently and then, both improvement factors for the daytime and nighttime will be added together, thus giving equal weight to each factor. Given that interference tends to be greater at night and interference-free service areas are greater in the daytime, the improvement factors will still tend to favor reductions in nighttime interference.

70. To summarize, if no fulltime station requests an allotment in a given area, the next priority will go to daytime-only stations. Daytime-only stations located within the 0.5 mV/m-50% skywave contours of Class I stations and which are licensed to serve communities of 100,000 or more, that currently lack a local fulltime aural service, will be considered as having first priority among daytime-only facilities. This will give the Commission the opportunity to make a fulltime allotment to several medium-sized cities in or adjacent to major metropolitan markets that now lack a local fulltime aural station and have no reasonable prospects for obtaining one. The next priority will go to other daytime-only stations, consistent with the improvement factor calculation methodology described above that ranks stations according to which ones cause the most daytime interference in relation to the service provided. As discussed in more detail in the AM Stereo section, stations within each priority group that propose to broadcast in AM stereo will be awarded a preference.

71. The fourth area of consideration in the migration segment of this Report is allotment or assignment options. These are the planning methods under consideration for the development of the expanded band. Assignment planning would enable the Commission to maximize the number of stations on each channel. Such a method would require each applicant to choose a specific site and custom-design the station's technical parameters such as frequency, power and antenna systems to protect other assignments. By contrast, allotment planning requires the Commission to perform the initial planning by specifying for each allotment an area within which a station on a given channel may be established

with generally fixed technical parameters.

72. The Commission finds that the development of a flexible allotment plan for the expanded band is the best means of initiating service in the new band consistent with our overall AM improvement goals. Such a plan should allow small variations in inter-allotment spacings to: (a) Permit sufficient flexibility to derive an allotment plan that would satisfy the needs and interests of licensees that desire to migrate and (b) ensure that the expanded band would be as interference-free as possible. Also, the Commission believes that a site tolerance on the order of 20 km would be desirable to define the allotment area. This approach will enable the Commission to establish Model I service in this new spectrum, while ensuring that the site location requirements of preferred migrators can be accommodated.

73. Next, the Report looks at the sample allotment plan in considering the migration portion of this decision. The purpose of the sample allotment plan is to illustrate the methods that will be used to create the final plan. The sample allotment plan the Commission has developed is based upon the voluntary letters of intent filed in response to the Notice. The resultant sample allotment plan is included in appendix D of the full Report. It should be noted that there are still some uncertainties to be resolved regarding use of the expanded band in international border areas. Work continues on bilateral negotiations to finalize agreements on this matter. However, parties are advised that the sample allotment plan is subject to possible revisions, particularly in border areas. Since the sample allotment plan is primarily for illustrative purposes, these potential discrepancies are of little consequence.

74. The Report next considers the selection process for migrating stations. The Notice proposed to announce a filing window, within which petitions for authority to move to the expanded band could be filed. Unlike the present application process, no showing would be required for the proposed new operation; technical information would address only the petitioner's currently licensed station. All candidates would be required to operate Model I facilities (stereo optional) unless restricted by international agreements or special circumstances that warrant variations. Should the Commission rule favorably on the petition, it would specify the frequency to be used and any additional pertinent technical details. To receive

an assignment, successful petitioners would then be required to file a complete application on FCC Form 301.

75. The Commission remains convinced that the general approach outlined in the Notice is both a viable and an efficient approach to administering the selection process. The following summarizes the steps involved in developing the allotment plan:

(a) The Commission will issue a Public Notice announcing a filing window during which AM stations may file a petition for establishment of an allotment in the expanded band. No filing fee will be required for such petitions. After the filing window closes, the Commission will issue a Public Notice (for information purposes) that lists all stations that filed petitions.

(b) The Commission will extract relevant data from the petitions and enter the information into the database.

(c) The Commission will rank all petitions in accordance with the priority groups and improvement factors described in the Report and Order. The priority groups are: (1) Fulltime stations ranked according to sum of daytime and nighttime improvement ratios of: The composite area of interference caused, to the areas of service provided; (2) daytime stations located within the 0.5mV/m-50% skywave contours of Class I stations which are licensed to serve communities of 100,000 or more, that currently lack a fulltime aural service; (3) daytime-only stations ranked according to the ratio of: The composite area of daytime interference caused, to the area of daytime service provided.

(d) Based upon the overall ranking of the petitions performed in step (c), the Commission will produce the Allotment Plan.

(e) The Commission will then issue a Public Notice identifying the stations that are eligible to apply for authorizations associated with specific allotments. Stations not selected for migration will be given thirty (30) days to file for reconsideration of the Commission's action with arguments limited to addressing errors in the selection process.

(f) After the allotment plan has become final and no longer subject to Commission reconsideration, the Commission will enter the allotment into the Commission's AM Engineering Data Base. This entry will include: Location, frequency, whether or not AM stereo is to be used, and other generic technical information with regard to the particular allotment.

(g) Stations selected for migration will be afforded sixty (60) days from the date of allotment notice becoming final in

which to file an application for a CP on the allotted channel. The application should be filed on Form 301 and must be accompanied by the normal filing fee for such application.

(h) After acceptance of the application for filing, the Commission will then put the application on a cut-off list. The application will then be subject to petitions to deny but not to competing applications.

(i) After grant of the CP application and construction of the authorized facilities, the permittee will then file a covering license application on FCC Form 302. Licenses for stations in the 1605-1705 kHz band will be issued for a term that is concurrent with the existing license for the operation in the 535-1605 kHz band.

(j) One year after the initial allotment plan has become final (see (f) above), those allotments provided for in the initial allotment plan that have not been authorized (or for which timely applications are not pending) will be deleted from the Commission's data base and the Commission will open a second filing window to allow for petitions by existing stations to migrate to the expanded band.

(k) Upon completion of the second filing window for petitions to migrate and the subsequent authorization procedures, the Commission will continue to monitor the migration process to assess the potential for adding additional stations to the band. As part of that assessment, the Commission will determine whether additional allotment windows will be utilized or whether to implement a traditional assignment scheme to best maximize the remaining available spectrum.

76. The Report now examines ownership limitations and a transition period. The favorable comments that the Commission has received in response to the proposals set forth in the Notice reinforces the Commission's initial conclusion that temporary dual ownership and operational flexibility are essential to a successful transition to the expanded band. The Commission therefore finds it appropriate to adopt new ownership rules.

77. The Report adopts the proposal to add a note to the multiple ownership rules creating an exception to the duopoly rule that would permit the simultaneous ownership and operation of an expanded band and an existing band station with overlapping 5 mV/m contours for a fixed transition period initially set at 5 years. After the expiration of the transition period, the license for the existing band station will

be surrendered. Considering the emphasis placed by commenters on flexibility regarding this issue, the Commission will monitor progress in the use of the expanded band during this period and grant an appropriate extension if factors affecting the overall development of the band warrant such action. These factors would include, among others, the economic viability of stand-alone expanded stations and the penetration of full-band receivers in the marketplace.

78. An exception will also be made to our national ownership rules allowing the numerical limit to be exceeded during this transitional phase. The Commission emphasizes, however, that following construction of the expanded band station, the license that would be issued if all terms of construction were to be met would be conditioned on the eventual surrender of the existing band license. As outlined in the Notice, during the interim the licensee would be prohibited from operating on one of its authorized frequencies and selling its operation on the other frequency. If a station is authorized to move to the expanded band, and the licensee later decides to operate on only its former frequency, the Commission will require it to surrender its expanded band authorization and its allotment would be deleted. After an expanded band station is licensed to operate and the transition period has expired, the existing band operation will go silent. Any application seeking the frequency of the former existing band operation will not "inherit" the previous station's radiation rights, but will instead have to meet the standards in effect at the time of the filing.

79. The Commission will also permit simulcasting on both bands during the transition period. Not allowing for such duplication privileges would only act as a disincentive to broadcasters considering to move to the new band. It is vital to employ all means available to encourage broadcasters and listeners to utilize the new band. Considering the economic ramifications of such a move, we believe that same-service simulcasting for a transition period will only help in our efforts to encourage development of the new service.

80. Finally, the Commission acknowledges the separately pending Notice of Proposed Rule Making in MM Docket No. 91-140 (56 FR 26365, June 7, 1991) regarding the possible revision of the radio multiple ownership rules. The notes that are being added to the current multiple ownership rules in order to accommodate the new AM expanded band will be adjusted, if necessary, to

reflect any comprehensive changes that may be made to the rules in that proceeding.

81. In this section, the Commission has adopted an appropriate set of rules for the expanded band which is intended to reduce interference in the existing band, while facilitating the prompt initiation of service in the new broadcasting spectrum. In this way the Commission intends to maximize the benefits to the AM service as a whole, due to the migration process. Of course, no improvement can be realized through these actions alone without the recognition by preferred migrators that such a move would be in their own best interests. The regulations adopted in this Report are intended to achieve that effect. The Commission stands committed to its objective of creating a model AM service in the expanded band that will ensure that the full potential of AM broadcasting can be realized.

82. The Commission now considers expanded band technical standards. The Notice proposed that the technical standards applying to the existing AM band apply generally to operations in the expanded band. These standards include minimum antenna efficiency and ground system requirements, antenna radiation characteristics, and blanketing restrictions.

83. The Commission remains convinced that these initial proposals will best serve the defined goals and the Report therefore adopts them *in toto*. By this action, the Commission establishes for use in the new spectrum, fundamental technical operating criteria that have been applied to AM broadcasting for many years. Use of such criteria links the existing and expanded bands by applying uniform and basic station operational characteristics and provides a known basis for developing the expanded band so as to achieve a significant degree of improvement of the AM service.

84. Lastly under the topic of migration, the Report analyzes city coverage for expanded band stations. The Notice proposed that stations in the expanded band be required to provide nighttime coverage of at least 50% of the principal community by the 5 mV/m or the interference-free contour, whichever value is greater. Nighttime coverage would be calculated using the RSS method without exclusion. Comment was also sought on the option of allowing the 50% coverage minimum on a temporary basis and ultimately returning to the 100/80% coverage standard presently in effect for the existing band.

85. Because the Commission believes that AM improvement will be accomplished only if facility changes which move the AM service in the direction of the adopted models are granted, resolution of this issue essentially requires the Commission, when determining whether to grant an application for migration to the expanded band, to balance the qualitative improvement of the AM service against the current minimum extent of service. Since signals propagate somewhat less efficiently at expanded band frequencies than in the existing band and close-in sites suitable for AM antennas are increasingly difficult (and expensive) to find, the Notice raised the possibility of relaxing coverage requirements to facilitate the relocation of preferred migrators.

86. Regarding those commenters urging that more than 50% coverage of the city be required, the Commission notes that this position does not address the desirability of facilitating preferred migrators, which was the basis for the coverage relaxation proposed. Furthermore, the limitations imposed on expanded band facilities (power limits, poorer propagation at higher frequencies) may make it difficult for migrating stations to serve their communities from existing sites. The Commission does not believe a 50% coverage requirement results in substandard stations. While less rigorous than the present standard, the 50% requirement nonetheless ensures a signal of significant quality to the community of license and the added flexibility of a 50% coverage rule allows the maximum latitude consistent with the goals of community service for stations to locate expanded band facilities at cost effective locations.

87. The final segment of the Commission's strategy for rejuvenating the AM industry is consolidation. In order to achieve the goal of interference reduction in the existing AM band, the Notice sought comment on proposed changes to the Commission's non-technical policies and rules intended to motivate broadcasters to reduce interference in the band. Specifically, the proposed changes included: (1) Granting tax certificates to AM licensees who receive monetary compensation from another licensee to surrender a broadcast license or to modify an existing facility if those acts resulted in interference reduction; (2) relaxing the Commission's multiple ownership rules to permit a licensee significantly reducing interference to co-channel or adjacent channel stations to own AM stations whose 5 mV/m

contours overlap; and (3) possibly reimposing an AM-FM program nonduplication rule.

88. Regarding voluntary agreements, section 1071 of the Internal Revenue Code, 26 U.S.C. 1071, permits the Commission to issue a tax certificate to the seller of a regulated property when the sale will give effect to a new or changed Commission policy regarding the ownership or control of broadcast stations. A tax certificate enables the seller of the broadcast property to defer any capital gain it realizes by acquiring qualified replacement property within two years of the sale or by reducing the basis of other depreciable property. See 26 U.S.C. 1033.

89. These tax certificates involve both the Commission and the Internal Revenue Service ("IRS"). The Commission's responsibility in this regard is to determine whether the "sale or exchange of property" effectuates a new Commission policy. As a result of this proceeding, the Commission adopts a new policy to discourage ownership interests in AM stations causing interference and to encourage existing licensees to enter into voluntary agreements to reduce such interference. It is the Commission's view that improvement in the technical quality of the AM service will promote the public interest objective of an overall competitive radio broadcasting service. Cf. *Telecolor Network of America*, 58 RR 2d 1443 (1985). To that end, the Commission will issue tax certificates to AM licensees receiving financial compensation for surrendering their licenses for cancellation. The tax certificates will be issued upon the surrendering of the AM license for cancellation.

90. These tax certificates will only be issued in response to agreements filed within three (3) years of the effective date of this Report. The Commission considers such transactions "necessary and appropriate to effectuate" its new policy of encouraging the reduction of interference in the AM band. The Commission notes, however, that the IRS makes the ultimate determination whether the statutory requirement of a "sale or exchange of property" has been met. The Commission further notes that a transaction involving the sale of a station and surrender of its license has traditionally been construed to involve a "sale or exchange of property" within the meaning of section 1071. See Policy Statement on Issuance of Tax Certificates, 92 FCC 2d 170 (1982). The Commission thinks a reasonable argument can be made than an agreement to surrender a license in

exchange for payment can be viewed as a sale or exchange within the meaning of section 1071. The tax certificates will be granted by the Commission in the circumstances described above, subject to IRS approval regarding the "sale or exchange of property" determination.

91. The Notice also proposed issuing tax certificates to those licensees that modify their facilities to reduce interference. While the Commission continues to encourage such voluntary agreements, it believes the issuance of tax certificates in such situations to be legally problematic as regards the statutory requirement of a "sale or exchange." The Commission will, therefore, limit the issuance of tax certificates to situations involving a surrender of a license.

92. The Report next discusses the common ownership aspect of consolidation. In order to facilitate reduction of interference in the existing AM band, the Notice proposed to waive § 73.3555(a)(1) of the Commission's rules—the AM duopoly or contour overlap rule—on a case-by-case basis, to permit common ownership of two commercial AM stations with overlapping 5 mV/m contours if an applicant showed that a significant reduction in interference to adjacent or co-channel stations would accompany that common ownership. Simultaneous broadcasting of the same program on both stations would be permitted if the stations served substantially different markets or communities. In order to ensure that the promised interference reduction would result from the joint ownership, the Notice proposed to require applicants to submit, along with their waiver requests, contingent applications for the major or minor facilities change needed to achieve the necessary interference reduction.

93. After careful review of the comments, the Commission adopts the proposal made in the Notice limiting grant or waiver requests to those situations that result in interference reduction to co-channel or adjacent channel stations. In making our waiver decisions, however, the Commission will remain mindful of viewpoint diversity and market concentration and will consider these factors in conjunction with what will be accomplished by an interference reduction proposal. The Commission will require to be filed, along with waiver requests, contingent applications for major or minor facilities changes demonstrating the nature of the interference reduction to be accomplished. In view of the potentially wide range of factual circumstances in which beneficial interference reduction

may occur, the Commission declines to adopt a benchmark which a proposal must meet to be considered as one resulting in "significant" interference reduction. However, the Commission will be guided by factors such as those enunciated in our migration selection processes in determining whether a reduction is "significant." Simulcasting on these commonly owned stations will be permitted if the stations serve substantially different markets or communities.

94. Because the radio multiple ownership rules may be modified pursuant to pending decisions developing from the above-cited Notice of Proposed Rule Making in MM Docket No. 91-140, the Commission acknowledges that a future rule revision may allow for commonly owned AM stations without any demonstration of interference reduction. At this juncture, however, the Commission's goal is to improve the overall state of the AM service and to offer incentives to aid in attaining this goal within the parameters of this rule making. Any adjustment or expansion to the limited multiple ownership rule changes in this proceeding will be coordinated with any overall future changes that may be implemented with regard to these rules.

95. The last area of concern in the consolidation portion of the Report pertains to the Commission's AM-FM programming nonduplication rule. The Notice sought comments on issues relating to whether the Commission should impose limits on AM-FM duplication. The Commission generally believes that encouraging separate programming by AM-FM combinations would effectively serve both the goals of promoting diversity and that of reducing interference and congestion in the AM service. However, because of the likelihood of substantially changed circumstances in the AM band, the Commission finds that such limits would currently be premature. Thus the Report does not adopt such restrictions. The Commission will revisit this issue at the end of three years to determine whether, informed by a more certain knowledge of the direction of the AM service, program duplication limitations are advisable.

96. In summary, the changes in the non-technical areas of the Commission's rules and policies adopted in this report will serve to enhance the existing AM service through the achievement of overall interference reduction in the band. Likewise, the Commission's decision to revisit the issue of imposing a program nonduplication requirement in three years will enable the

Commission to assess the impact of today's decisions on the AM service and better evaluate the need for program duplication limits. Moreover, adoption of changes such as the encouragement of voluntary arrangements to reduce interference through the issuance of tax certificates and the relaxation of the multiple ownership rules for those who can demonstrate significant reduction of interference to other AM stations, will help reshape the service and foster long-term benefits so that it can reach its maximum potential.

97. The Notice next proposed that both Model I and Model II stations utilize stereo modulation and sought comment as to what decisions regarding stereo would be useful in this proceeding. Those commenters who opposed a mandatory AM stereo requirement have convinced the Commission that the provision of AM stereo in the existing band should remain a voluntary decision. Arguments of economic hardship are very persuasive for stations remaining in the existing band, since many of these stations are already in precarious financial situations and cannot afford the cost of converting their facilities to stereo operation.

98. However, in the case of AM stations that are migrating to the expanded band, the Commission believes that there is a compelling reason to provide an incentive for the use of AM stereo. The Commission considers AM stereo a valuable asset. Failure to encourage use of AM stereo would send a signal to receiver manufacturers and the public that the Commission is less than completely committed to the provision of a fully competitive service in the expanded band. Additionally, AM stereo operations in the expanded band would provide receiver manufacturers with an added incentive to produce receivers capable of stereo reception for the entire AM band. Accordingly, while the Commission encourages stereo operation in the existing band, it will provide a specific preference for stereo proponents in the expanded band. The incremental expense associated with the provision of AM stereo in a new facility is typically less than the cost of converting an old facility, and represents only a small percentage of the total cost of building a new AM station.

99. To encourage migrating stations to acquire the advanced technology associated with AM stereo at the start, migration preferences will be offered for those existing band stations which, when filing petitions for expanded band

allotments, express their commitment to use of AM stereo for their proposed expanded band operation. Under this approach the Commission will favor a migrator who proposes stereo over one who does not, where the difference in their improvement factors is not sufficient to outweigh the benefits of stereo operation.

100. The stereo preference will be applied in this manner. As explained above, petitions for allotments of expanded band channels submitted by existing stations will be arranged in each priority group in order of the improvement factor calculated for each petitioner. Allotments will be made one-by-one beginning with the highest improvement factor. During this process, the Commission may find that an allotment under consideration (candidate allotment) is mutually exclusive with one or more previously selected allotments (established allotments) and cannot be accommodated in the expanded band. The Commission will substitute the candidate allotment for a previously established allotment provided all of the following conditions are met:

(1) The petitioner for the candidate allotment has made a written commitment to the use of AM stereo and the petitioner for the established allotment has not;

(2) The difference between the improvement factors associated with the candidate and established allotments does not exceed 10% of the improvement factor of the candidate allotment;

(3) The substitution will not require the displacement of more than one established allotment; and

(4) Both the candidate allotment and the established allotment are within the same priority group (e.g., fulltime stations).

101. The Report next decides not to provide any specific allocation of an expanded band frequency for Travelers Information Stations (TIS) on a primary basis. However, the support for TIS operation on a secondary basis throughout the AM band (535-1705 kHz) appears substantial. The great number of frequencies on which TIS assignment would be possible would more than offset the loss, in a few areas, of the frequency 1610 kHz.³

102. Multiple channel assignment flexibility for TIS offers possibilities of locating TIS where it can function optimally, with the option of selecting a frequency with a recognized absence of

interference from broadcast stations, or even to provide multiple channel coverage for a given area. Therefore, the Commission amends § 90.242 of its rules to permit the authorization of TIS, on a secondary basis, on an assignable frequency in the AM band. Since TIS operation is secondary to AM broadcast station operation, TIS applicants must protect broadcast assignments in the 535-1605 kHz band and allotments in the 1605-1705 kHz band. Additionally, changes will be made to part 2, Table of Frequency Allocations, § 2.106 of the rules.

103. The Commission also concludes that no change should be made in the current showings required of TIS applicants. While sympathetic to the requests of TIS interests to augment TIS service to some extent, the Commission finds that the current record lacks the technical specifics necessary for such an action. In addition, the Notice did not contemplate any changes and consideration of such changes is beyond the scope of this proceeding. The next several years should be a period in which significant changes are made in many AM stations' facilities. The Commission does not believe that such a dynamic operating environment is one which is conducive to the development of enhanced technical standards for TIS. The resolution of any unique difficulties associated with the installation of a particular TIS can be handled on a waiver basis. The Report determines that the recommendation that TIS operation be permitted in the FM band is also outside the scope of this proceeding.

104. Finally, the Commission turns to the issue of whether receiver manufacturers should be encouraged to modify their designs for AM radios, and, if so, what form that encouragement should take. The Notice proposed to establish criteria for a "single hypothetical model" AM receiver possessing "desirable and yet affordable performance attributes" to be used as a "reference" model to induce manufacturers to "make significant improvements in the performance of AM tuners." The NRSC draft recommendations were proposed as the basis for this model.

105. After a review of the evidence established in this proceeding, the Commission elects to proceed with the proposal as outlined in the Notice to use the recommendations of the NRSC in the spectrum planning assumptions. As stated in the Notice, the Commission intends to treat them as recommendations to the receiver industry, not requirements. In a related

³ See § 90.242 of the rules in connection with the allotment plan to be developed in order to determine the continued usability of 1610 kHz in any given area.

action, the Commission encouraged AM stations to implement NRSC-1 audio pre-emphasis in addition to requiring them to comply with NRSC-2, which sets the standard for the transmitted AM signal envelope. A logical follow-up to that effort would appear to be the adoption by the receiver manufacturers of the NRSC-3 receiver specifications, which match receiver bandwidth characteristics to those set for transmitters. The Commission will at appropriate intervals publish a list of those receivers that meet the NRSC-3 standard or which are comparable so that consumers can make an informed choice when purchasing AM radios.

106. Although advocated by a number of commenters, the Commission is not including in the receiver model any specifications with respect to stereophonic reception. The two most frequently suggested specifications were that: (1) Any receiver capable of FM stereophonic reception should also be capable of AM stereophonic reception, and (2) all AM stereophonic receivers should be capable of receiving and decoding both the Motorola and the Kahn stereophonic transmission systems. A consumer who chooses to listen to musical programming on FM and news programming on AM should not be forced to purchase a stereophonic AM receiver. Therefore, the Report does not mandate that AM-FM receivers capable of receiving FM stereo signals must also be capable of receiving AM stereo signals. Nevertheless, receiver manufacturers are encouraged to include AM stereo reception capability with NRSC-3 performance characteristics in their receivers.

107. The Notice included proposed rules related to the specific issues addressed in this proceeding as well as a general revision of the existing AM rules. Most comments echoed the Commission's position that the proposed revisions were indeed valuable and necessary from the standpoint of administrative accuracy.

108. A specific rule change proposed in the Notice addressed the lack of specific direction contained within § 73.152 regarding the filing of directional antenna pattern augmentation applications. The proposed language would clearly enunciate the instructions that had been longstanding Commission staff policy. The rule would not include procedures which would promote efficient use of AM spectrum and, with the aid of these instructions, eliminate numerous amendments to applications which are routinely found to be not in compliance with policy. Additionally, the

Commission concludes, based on the majority of the comments, that directional pattern augmentation should be available to stations in the expanded band for those operations in need of this procedure where the maximum allowable radiation is not exceeded. Stations would need to consider using this process within the context of maintaining a radiation equivalence toward other allotments or areas of protection where the value of the radiated fields do not approach the maximum allowable limits.

109. On March 29, 1990, we released an Order that curtailed the filing of most applications for new or changed AM facilities. The Commission believes this restriction upon the filing of applications of new and changed AM facilities is no longer necessary and it will be removed as a seventy (70) days from the date of the adoption of this Report.

110. In the Notice the Commission stated its desire to minimize the use of directional antennas in the expanded band. In the relatively few instances that simple directional antennas would be utilized, the Notice proposed significantly less burdensome requirements for measurement data for demonstrating pattern radiation compliance by removing the measurements required by § 73.151 (a)(1)(ii) and (a)(1)(iii). The Report concludes that for simple directional antennas systems in the expanded band (those utilizing two towers), the Commission will require measured radials only in the directions for which the proposed allotment is short-spaced with another co-channel or adjacent channel allotment. This action will ensure that equivalent protection is provided to all expanded band facilities. The Commission further finds that in the isolated instances where a directional antenna system of more than two towers is used in the expanded band, full proof-of-performance requirements will apply.

111. Finally, a number of changes are made to part 2, Table of Frequency Allocations, § 2.106 of the rules, in addition to those described in the section on the Traveler's Information Service, to implement the AM band expansion and to modify the conditions for non-broadcast use of the band 1605-1705 kHz. These changes were proposed in the Notice and no comments were received on these subjects. In general, they reflect the Commission's decision to use that band for broadcast operation while continuing to permit operation of existing non-broadcast station, provided interference is not caused to broadcast stations.

112. In summary, in this Report and Order the Commission has taken a number of major steps to improve technical standards and thus to reduce the level interference in the existing band, to encourage certain existing licensees to move into the expanded portion of the AM band, and to consolidate existing broadcasting facilities in order to further reduce congestion and interference in the existing band. The Commission has taken these steps in order to slow or reverse the trends in this band towards rising congestion and interference and declining listening audiences. While aware that the actions of broadcasters and listeners will ultimately determine the future direction of AM radio, the Commission believes that the changes made in this Report will allow broadcasters to make changes that may greatly enhance their competitive position relative to other audio outlets.

Administrative Matters

113. Because the Commission is now issuing this Report and Order and closing this docket, it will also lift the freeze on AM applications on the effective date of this Report and Order. The Commission will begin accepting applications for modifications of existing AM stations and applications for new AM stations in the existing AM band. Such applications will be required to comply with the new technical standards that are adopted today. Applications currently on file that have been "cut-off" will not be required to amend. All others will be given sixty (60) days from the effective date of this Report and Order to file amendments to satisfy the requirements of the revised rules.

114. In Appendix D of the full Report, the Commission describes an example allotment plan for the expanded band that conforms to our new technical requirements. At a date to be specified in the future, the Commission will announce a filing window during which existing licensees will be allowed to file petitions to operate a station in the expanded band. Such petitioners will be required to comply with all relevant technical rules.

115. The Report and Order in MM Docket No. 89-46 adopted significant revisions to the rules and policies concerning interference reduction agreements, elimination of the "grandfathering" of deleted AM facilities, contingent applications, local service floor, and competing applications. The Report and Order in MM Docket No. 88-508 adopted changes to the Rules for calculating skywave

field strength utilizing a new, more accurate skywave propagation model that better depicts nighttime skywave service and interference on all channels. In the Report and Order in MM Docket No. 88-510, the Commission substituted new groundwave propagation curves for the current curves which allows better prediction of groundwave service and interference. In those actions, the Commission specifically stated that the effective date of the revisions would be established in this proceeding. Accordingly, the appropriate language is included in this Report and Order, and as stated in the **Federal Register** notices of all three decisions, the revised rules are included in the amended text of this action.

Final Regulatory Flexibility Analysis Statement

116. Pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. 605, it is certified that this decision will have a significant impact on a substantial number of entities by enacting rules and policies intended to augment the increasingly declining role of AM radio in the competitive marketplace. The goal of this proceeding is to facilitate an overall improvement and revitalization of AM broadcast service. Thus, small businesses associated with AM radio will be effected beneficially, both short term and long term, by the action taken in this Report and Order.

117. It is again important to note that in reaching the decisions made in this Report and Order, the focus has indeed been on those measures that will attain the objective of AM service restoration, rather than on measures that might more

directly benefit one or more segments of the industry itself. Therefore, those whose interests have not been fully realized by these actions should note that the Commission has attempted to balance their individual perspectives and needs with the ultimate goal of promoting the revitalization of the AM broadcast service as a whole. However, the overall view of this proceeding is that this revitalization of the AM band outweighs any particular broadcaster's individual perceived needs or desires. The complete text of this Final Regulatory Flexibility Analysis may be found in the full text of this Report and Order.

Ordering Clauses

118. Accordingly, *it is ordered* that pursuant to the authority contained in sections 4 and 303 of the Communications Act of 1934, as amended, 47 U.S.C. 154 and 303, 47 CFR parts 2, 73, and 90 are amended as set forth below, the effective date is contingent upon approval by OMB; a Notice announcing the specific effective date will be placed in the **Federal Register** when it becomes available.

119. *It is further ordered* that the freeze currently in effect on AM broadcast station applications is lifted, the effective date of its removal is contingent upon approval by OMB, and also upon OMB approval of revised FCC application Forms 301 and 302; a Notice announcing the specific effective date will be placed in the **Federal Register** when it becomes available.

120. *It is further ordered*, that the amendments to Part 73 of the Commission's Rules adopted April 12,

1990, in MM Dockets No. 88-508, 88-510, and 89-46, are effective contingent upon approval by OMB; a Notice will be placed in the **Federal Register** announcing the specific effective date when it becomes available.

121. *It is further ordered*, that the petition for rule making filed May 25, 1989 by Earl J. Weinreb is denied.

122. *It is further ordered* that MM Docket No. 87-267 is terminated.

List of Subjects

47 CFR parts 2 and 90

Radio.

47 CFR Part 73

Radio broadcasting.
Federal Communications Commission.
William F. Caton,
Acting Secretary.

Amendatory Text

Part 2 of title 47 of the CFR is amended as follows:

PART 2—[AMENDED]

1. The authority citation for part 2 continues to read as follows:

Authority: 47 U.S.C. 154 and 303

2. Section § 2.106 is amended by revising the 535-1605 kHz band, by adding US321, by revising footnotes US221, US238, US299, NG128 and 480 (International footnotes) and by removing footnote US237 as follows:

§ 2.106 Table of frequency allocations.

* * * * *

United States Table		FCC Use Designators	
Government	Non-government	Rule Part(s)	Special-Use Frequencies
Allocation kHz	Allocation kHz		
(4)	(5)	(6)	(7)
535-1705.....	535-1705 BROADCASTING.....	RADIO BROADCASTING (AM) (73). Alaska Fixed (80). Auxiliary Broadcasting (74). Private Land Mobile (90).	535-1705 kHz: Travelers Information.
480 US238, US299, US321,.....	480 US238, US299, US321, NG128.		

US221 In the 525-535 kHz band, the mobile service is limited to distribution of public service information from Travelers Information Stations operating on 530 kHz.

US238 The 1605-1705 kHz band is allocated to the radiolocation service on a secondary basis.

US299 The 1615-1705 kHz band in Alaska is also allocated to the maritime mobile services and the Alaska fixed service on a secondary basis to Region 2 broadcast operations.

US321 The 535-1705 kHz band is also allocated to the mobile service on a secondary basis for the distribution of public service information from Travelers

Information Stations operating on 10 kHz spaced channels from 540 to 1700 kHz.

NG128 In the 535-1705 kHz band, AM broadcast licensees or permittees may use their AM carrier on a secondary basis to transmit signals intended for both broadcast and non-broadcast purposes. In the 88-108 MHz band, FM broadcast licensees or permittees are permitted to use subcarriers on a secondary basis to transmit signals

intended for both broadcast and non-broadcast purposes. In the 54-72, 76-88, 174-216 and 740-890 MHz bands, TV broadcast licensees or permittees are permitted to use subcarriers on a secondary basis for both broadcast and non-broadcast purposes.

480 In Region 2, the use of the 1605-1705 kHz band by stations of the broadcasting service is subject to the Plan established by the Regional Administrative Radio Conference (Rio de Janeiro, 1988).

In Region 2, in the 1625-1705 kHz band, the relationship between the broadcasting, fixed and mobile services is shown in No. 419. However, the examination of frequency assignments to stations of the fixed and mobile services in the 1625-1705 kHz band under No. 1241 shall take account of the allotments appearing in the plan established by the Regional Administrative Radio Conference (Rio de Janeiro, 1988).

Part 73 of title 47 of the CFR is amended as follows:

PART 73—[AMENDED]

3. The authority citation for part 73 continues to read as follows:

Authority: 47 U.S.C. 154 and 303.

4. Section 73.14 is amended by removing the Note following the definition of AM broadcast channel, by removing the definitions of Dominant station and Secondary AM station, by revising the definitions of AM broadcast band, AM broadcast channel, AM broadcast station, Main channel, Maximum percentage of modulation and Stereophonic channel, and by adding definitions of Model I and Model II facilities, to read as follows:

§ 73.14 AM broadcast definitions.

AM broadcast band. The band of frequencies extending from 535 to 1705 kHz.

AM broadcast channel. The band of frequencies occupied by the carrier and the upper and lower sidebands of an AM broadcast signal with the carrier frequency at the center. Channels are designated by their assigned carrier frequencies. The 117 carrier frequencies assigned to AM broadcast stations begin at 540 kHz and progress in 10 kHz steps to 1700 kHz. (See § 73.21 for the classification of AM broadcast channels).

AM broadcast station. A broadcast station licensed for the dissemination of radio communications intended to be received by the public and operated on a channel in the AM broadcast band.

Main channel. The band of audio frequencies from 50 to 10,000 Hz which amplitude modulates the carrier.

Maximum percentage of modulation. The greatest percentage of modulation that may be obtained by a transmitter without producing in its output, harmonics of the modulating frequency in excess of those permitted by these regulations. (See § 73.1570)

Model I facility. A station operating in the 1605-1705 kHz band featuring fulltime operation with stereo, competitive technical quality, 10 kW daytime power, 1 kW nighttime power, non-directional antenna (or a simple directional antenna system), and separated by 400-800 km from other co-channel stations.

Model II facility. A station operating in the 535-1605 kHz band featuring fulltime operation, competitive technical quality, wide area daytime coverage with nighttime coverage at least 15% of the daytime coverage.

Stereophonic channel. The band of audio frequencies from 50 to 10,000 Hz containing the stereophonic information which modulates the radio frequency carrier.

5. Section 73.21 is revised to read as follows:

§ 73.21 Classes of AM broadcast channels and stations.

(a) *Clear channel.* A clear channel is one on which stations are assigned to serve wide areas. These stations are protected from objectionable interference within their primary service areas and, depending on the class of station, their secondary service areas. Stations operating on these channels are classified as follows:

(1) *Class A station.* A Class A station is an unlimited time station that operates on a clear channel and is designed to render primary and secondary service over an extended area and at relatively long distances from its transmitter. Its primary service area is protected from objectionable interference from other stations on the same and adjacent channels, and its secondary service area is protected from interference from other stations on the same channel. (See § 73.182). The operating power shall not be less than 10 kW nor more than 50 kW. (Also see § 73.25(a)).

(2) *Class B station.* A Class B station is an unlimited time station which is designed to render service only over a primary service area. Class B stations are authorized to operate with a minimum power of 0.25 kW (or, if less than 0.25 kW, an equivalent RMS antenna field of at least 141 mV/m at 1

km) and a maximum power of 50 kW, or 10 kW for stations that are authorized to operate in the 1605-1705 kHz band.

(3) *Class D station.* A Class D station operates either daytime, limited time or unlimited time with nighttime power less than 0.25 kW and an equivalent RMS antenna field of less than 141 mV/m at one km. Class D stations shall operate with daytime powers not less than 0.25 kW nor more than 50 kW. Nighttime operations of Class D stations are not afforded protection and must protect all Class A and Class B operations during nighttime hours. New Class D stations that had not been previously licensed as Class B will not be authorized.

(b) *Regional Channel.* A regional channel is one on which Class B and Class D stations may operate and serve primarily a principal center of population and the rural area contiguous thereto.

Note: Until the North American Regional Broadcasting Agreement (NARBA) is terminated with respect to the Bahama Islands and the Dominican Republic, radiation toward those countries from a Class B station may not exceed the level that would be produced by an omnidirectional antenna with a transmitted power of 5 kW, or such lower level as will comply with NARBA requirements for protection of stations in the Bahama Islands and the Dominican Republic against objectionable interference.

(c) *Local channel.* A local channel is one on which stations operate unlimited time and serve primarily a community and the suburban and rural areas immediately contiguous thereto.

(1) *Class C station.* A Class C station is a station operating on a local channel and is designed to render service only over a primary service area that may be reduced as a consequence of interference in accordance with § 73.182. The power shall not be less than 0.25 kW, nor more than 1 kW. Class C stations that are licensed to operate with 0.1 kW may continue to do so.

§ 73.22 [Removed]

6. Section 73.22 is removed.

7. Section 73.3570 is redesignated as § 73.23 and revised to read as follows:

§ 73.23 AM broadcast station applications affected by international agreements.

(a) Except as provided in paragraph (b) of this section, no application for an AM station will be accepted for filing if authorization of the facilities requested would be inconsistent with international commitments of the United States under treaties and other international agreements, arrangements and understandings. (See list of such international instruments in

§ 73.1650(b)). Any such application that is inadvertently accepted for filing will be dismissed.

(b) AM applications that involve conflicts only with the North American Regional Broadcasting Agreement (NARBA), but that are in conformity with the remaining treaties and other international agreements listed in § 73.1650(b) and with the other requirements of this part 73, will be granted subject to such modifications as the FCC may subsequently find appropriate, taking international considerations into account.

(c) In the case of any application designated for hearing on issues other than those related to consistency with international relationships and as to which no final decision has been rendered, whenever action under this section becomes appropriate because of inconsistency with international relationships, the applicant involved shall, notwithstanding the provisions §§ 73.3522 and 73.3571, be permitted to amend its application to achieve consistency with such relationships. In such cases the provisions of § 73.3605(c) will apply.

(d) In some circumstances, special international considerations may require that the FCC, in acting on applications, follow procedures different from those established for general use. In such cases, affected applicants will be informed of the procedures to be followed.

8. In § 73.24, the Note following paragraph (b) is removed, paragraph (e) is revised, paragraph (h) is revised, paragraph (i) is removed, paragraph (j) is redesignated as (i) and is revised, and paragraph (k) is redesignated as (j), as follows:

§ 73.24 Broadcast facilities; showing required.

* * * * *

(e) That the technical equipment proposed, the location of the transmitter, and other technical phases of operation comply with the regulations governing the same, and the requirements of good engineering practice.

* * * * *

(h) That, in the case of an application for a Class B or Class D station on a clear channel, the proposed station would radiate, during two hours following local sunrise and two hours preceding local sunset, in any direction toward the 0.1 mV/m groundwave contour of a co-channel United States Class A station, no more than the maximum value permitted under the provisions of § 73.187.

(i) That, for all stations, the daytime 5 mV/m contour encompasses the entire

principal community to be served. That, for stations in the 535–1605 kHz band, 80% of the principal community is encompassed by the nighttime 5 mV/m contour or the nighttime interference-free contour, whichever value is higher. That, for stations in the 1605–1705 kHz band, 50% of the principal community is encompassed by the 5 mV/m contour or the nighttime interference-free contour, whichever value is higher. That, Class D stations with nighttime authorizations need not demonstrate such coverage during nighttime operation.

* * * * *

9. In § 73.25, paragraphs (a)(1), (a)(2), (a)(2)(i), (a)(2)(ii) and (a)(2)(iii) are removed, and the heading, paragraphs (a), (b), and (c) and the Note following paragraph (b) are revised to read as follows:

§ 73.25 Clear channels; Class A, Class B and Class D stations.

* * * * *

(a) On each of the following channels, one Class A station may be assigned, operating with power of 50 kW: 640, 650, 660, 670, 700, 720, 750, 760, 770, 780, 820, 830, 840, 870, 880, 890, 1020, 1030, 1040, 1100, 1120, 1160, 1180, 1200, and 1210 kHz. In Alaska, these frequencies can be used by Class A stations subject to the conditions set forth in § 73.182(a)(1)(ii). On the channels listed in this paragraph, Class B and Class D stations may be assigned.

(b) To each of the following channels there may be assigned Class A, Class B and Class D stations: 680, 710, 810, 850, 940, 1000, 1060, 1070, 1080, 1090, 1110, 1130, 1140, 1170, 1190, 1500, 1510, 1520, 1530, 1540, 1550, and 1560 kHz.

Note: Until superseded by a new agreement, protection of the Bahama Islands shall be in accordance with NARBA. Accordingly, a Class A, Class B or Class D station on 1540 kHz shall restrict its signal to a value no greater than 5 μ V/m groundwave or 25 μ V/m-10% skywave at any point of land in the Bahama Islands, and such stations operating nighttime (i.e., sunset to sunrise at the location of the U.S. station) shall be located not less than 650 miles from the nearest point of land in the Bahama Islands.

(c) Class A, Class B and Class D stations may be assigned on 540, 690, 730, 740, 800, 860, 900, 990, 1010, 1050, 1220, 1540, 1570, and 1580 kHz.

10. Section 73.26 is revised to read as follows:

§ 73.26 Regional channels; Class B and Class D stations.

(a) The following frequencies are designated as regional channels and are assigned for use by Class B and Class D stations: 550, 560, 570, 580, 590, 600, 610, 620, 630, 790, 910, 920, 930, 950, 960, 970,

980, 1150, 1250, 1260, 1270, 1280, 1290, 1300, 1310, 1320, 1330, 1350, 1360, 1370, 1380, 1390, 1410, 1420, 1430, 1440, 1460, 1470, 1480, 1590, 1600, 1610, 1620, 1630, 1640, 1650, 1660, 1670, 1680, 1690, and 1700 kHz.

(b) Additionally, in Alaska, Hawaii, Puerto Rico, and the U.S. Virgin Islands the frequencies 1230, 1240, 1340, 1400, 1450, and 1490 kHz are designated as Regional channels, and are assigned for use by Class B stations. Stations formerly licensed to these channels in those locations as Class C stations are redesignated as Class B stations.

11. Section 73.27 is revised to read as follows:

§ 73.27 Local channels; Class C stations.

Within the conterminous 48 states, the following frequencies are designated as local channels, and are assigned for use by Class C stations: 1230, 1240, 1340, 1400, 1450, and 1490 kHz.

12. In § 73.28, paragraph (a) is removed, paragraph (b) is redesignated as paragraph (a) and revised, and paragraph (c) is redesignated as (b), as follows:

§ 73.28 Assignment of stations to channels.

(a) The Commission will not make an AM station assignment that does not conform with international requirements and restrictions on spectrum use that the United States has accepted as a signatory to treaties, conventions, and other international agreements. See § 73.1650 for a list of pertinent treaties, conventions and agreements, and § 73.23 for procedural provisions relating to compliance with them.

* * * * *

13. Section 73.29 is revised to read as follows:

§ 73.29 Class C stations on regional channels.

No license will be granted for the operation of a Class C station on a regional channel.

14. A new § 73.30 is added to read as follows:

§ 73.30 Petition for authorization of an allotment in the 1605–1705 kHz band.

(a) Any party interested in operating an AM broadcast station on one of the ten channels in the 1605–1705 kHz band must file a petition for the establishment of an allotment to its community of license. Each petition must include the following information:

(1) Name of community for which allotment is sought;

(2) Frequency and call letters of the petitioner's existing AM operation; and

(3) Statement as to whether or not AM stereo operation is proposed for the operation in the 1605-1705 kHz band.

(b) Petitions are to be filed during a filing period to be determined by the Commission. For each filing period, eligible stations will be allotted channels based on the following steps:

(1) Stations are ranked in descending order according to the calculated improvement factor.

(2) The station with the highest improvement factor is initially allotted the lowest available channel.

(3) Successively, each station with the next lowest improvement factor, is allotted an available channel taking into account the possible frequency and location combinations and relationship to previously selected allotments. If a channel is not available for the subject station, previous allotments are examined with respect to an alternate channel, the use of which would make a channel available for the subject station.

(4) When it has been determined that, in accordance with the above steps, no channel is available for the subject station, that station is no longer considered and the process continues to the station with the next lowest improvement factor.

(c) If awarded an allotment, a petitioner will have sixty (60) days from the date of public notice of selection to file an application for construction permit on FCC Form 301. (See §§ 73.24 and 73.37(e) for filing requirements). Unless instructed by the Commission to do otherwise, the application shall specify Model I facilities. (See § 73.14). Upon grant of the application and subsequent construction of the authorized facility, the applicant must file a license application on FCC Form 302.

Note 1: Until further notice by the Commission, the filing of these petitions is limited to licensees of existing AM stations (excluding Class C stations) operating in the 535-1605 kHz band. Selection among competing petitions will be based on interference reduction. Notwithstanding the exception in Note 4, within each operational category, the station demonstrating the highest value of improvement factor will be afforded the highest priority for an allotment, with the next priority assigned to the station with next lowest value, and so on, until available allotments are filled.

Note 2: The Commission will periodically evaluate the progress of the movement of stations from the 535-1605 kHz band to the 1605-1705 kHz band to determine whether the 1605-1705 kHz band should continue to be administered on an allotment basis or modified to an assignment method. If appropriate, the Commission will later develop further procedures for use of the 1605-1705 kHz band by existing station licensees and others.

Note 3: Existing fulltime stations are considered first for selection as described in Note 1. In the event that an allotment availability exists for which no fulltime station has filed a relevant petition, such allotment may be awarded to a licensed Class D station. If more than one Class D station applies for this migration opportunity, the following priorities will be used in the selection process: First priority—A Class D station located within the 0.5 mV/m-50% contour of a U.S. Class A station and licensed to serve a community of 100,000 or more, for which there exists no local fulltime aural service; second priority—Class D stations ranked in order of improvement factor, from highest to lowest, considering only those stations with improvement factors greater than zero.

Note 4: The preference for AM stereo in the expanded band will be administered as follows: When an allotment under consideration (candidate allotment) conflicts with one or more previously selected allotments (established allotments) and cannot be accommodated in the expanded band, the candidate allotment will be substituted for the previously established allotment provided that: The petitioner for the candidate allotment has made a written commitment to the use of AM stereo and the petitioner for the established allotment has not; the difference between the ranking factors associated with the candidate and established allotments does not exceed 10% of the ranking factor of the candidate allotment; the substitution will not require the displacement of more than one established allotment; and both the candidate allotment and the established allotment are within the same priority group.

15. Section 73.35 is added to read as follows:

§ 73.35 Calculation of improvement factors.

A petition for an allotment (See § 73.30) in the 1605-1705 kHz band filed by an existing fulltime AM station licensed in the 535-1605 kHz band will be ranked according to the station's calculated improvement factor. (See § 73.30). Improvement factors relate to both nighttime and daytime interference conditions and are based on two distinct considerations: (a) Service area lost by other stations due to interference caused by the subject station, and (b) service area of the subject station. These considerations are represented by a ratio. The ratio consists, where applicable, of two separate additive components, one for nighttime and one for daytime. For the nighttime component, to determine the numerator of the ratio (first consideration), calculate the RSS and associated service area of the stations (co- and adjacent channel) to which the subject station causes nighttime interference. Next, repeat the RSS and service area calculations excluding the subject

station. The cumulative gain in the above service area is the numerator of the ratio. The denominator (second consideration) is the subject station's interference-free service area. For the daytime component, the composite amount of service lost by co-channel and adjacent channel stations, each taken individually, that are affected by the subject station, excluding the effects of other assignments during each study, will be used as the numerator of the daytime improvement factor. The denominator will consist of the actual daytime service area (0.5 mV/m contour) less any area lost to interference from other assignments. The value of this combined ratio will constitute the petitioner's improvement factor. Notwithstanding the requirements of § 73.153, for uniform comparisons and simplicity, measurement data will not be used for determining improvement factors and FCC figure M-3 ground conductivity values are to be used exclusively in accordance with the pertinent provisions of § 73.183(c)(1).

16. Section 73.37 is revised to read as follows:

§ 73.37 Applications for broadcast facilities, showing required.

(a) No application will be accepted for a new station if the proposed operation would involve overlap of signal strength contours with any other station as set forth below in this paragraph; and no application will be accepted for a change of the facilities of an existing station if the proposed change would involve such overlap where there is not already such overlap between the stations involved:

Frequency separation (kHz)	Contour of proposed station (classes B, C and D) (mV/m)	Contour of any other station (mV/m)
0.....	0.005	0.100 (Class A).
	0.025	0.500 (Other classes).
	0.500	0.025 (All classes).
10.....	0.250	0.500 (All classes).
	0.500	0.250 (All classes).
20.....	5	5 (All classes).
	5	5 (All classes).
30.....	25	25 (All classes).

(b) In determining overlap received, an application for a new Class C station with daytime power of 250 watts, or greater, shall be considered on the assumption that both the proposed operation and all existing Class C stations operate with 250 watts and utilize non-directional antennas.

(c) If otherwise consistent with the public interest, an application requesting an increase in the daytime power of an existing Class C station on a local channel from 250 watts to a maximum of 1kW, or from 100 watts to a maximum of 500 watts, may be granted notwithstanding overlap prohibited by paragraph (a) of this section. In the case of a 100 watt Class C station increasing daytime power, the provisions of this paragraph shall not be construed to permit an increase in power to more than 500 watts, if prohibited overlap would be involved, even if successive applications should be tendered.

(d) In addition to demonstrating compliance with paragraphs (a), and, as appropriate, (b), and (c) of this section, an application for a new AM broadcast station, or for a major change (see § 73.3571(a)(1)) in an authorized AM broadcast station, as a condition for its acceptance, shall make a satisfactory showing, if new or modified nighttime operation by a Class B station is proposed, that objectionable interference will not result to an authorized station, as determined pursuant to § 73.182(1).

(e) An application for an authorization in the 1605–1705 kHz band which has been selected through the petition process (See § 73.30) is not required to demonstrate compliance with paragraph (a), (b), (c), or (d) of this section. Instead, the applicant need only comply with the terms of the allotment authorization issued by the Commission in response to the earlier petition for establishment of a station in the 1605–1705 kHz band. Within the allotment authorization, the Commission will specify the assigned frequency and the applicable technical requirements.

(f) Stations on 1580, 1590 and 1600 kHz. In addition to the rules governing the authorization of facilities in the 535–1605 kHz band, stations on these frequencies seeking facilities modifications must protect assignments in the 1610–1700 kHz band. Such protection shall be afforded in a manner which considers the spacings that occur or exist between the subject station and a station within the range 1605–1700 kHz. The spacings are the same as those specified for stations in the frequency band 1610–1700 kHz or the current separation distance, whichever is greater. Modifications that would result in a spacing or spacings that fails to meet any of the separations must include a showing that appropriate adjustment has been made to the radiated signal which effectively results in a site-to-site radiation that is equivalent to the radiation of a station

with standard Model I facilities (10 kW–D, 1 kW–N, non-DA, 90 degree antenna ht. & ground system) operating in compliance with all of the above separation distances. In those cases where that radiation equivalence value is already exceeded, a station may continue to maintain, but not increase beyond that level.

Note 1: In the case of applications for changes in the facilities of AM broadcast stations covered by this section, an application will be accepted even though overlap of field strength contours as mentioned in 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; and
- (3) There would be created no area of overlap with any station with which overlap does not now exist.

Note 2: The provisions of this section concerning prohibited overlap of field strength contours will not apply where:

- (1) The area of overlap lies entirely over sea water; or
- (2) The only overlap involved would be that caused to a foreign station, in which case the provisions of the applicable international agreement, as identified in § 73.1650, will apply. When overlap would be received from a foreign station, the provisions of this section will apply, except where there would be overlap with a foreign station with a frequency separation of 20 kHz, in which case the provisions of the international agreement will apply in lieu of this section.

Note 3: In determining the number of "authorized" aural transmission facilities in a given community, applications for that community in hearing or otherwise having protected status under specified "cut-off" procedures shall be considered an existing stations. In the event that there are two or more mutually exclusive protected applications seeking authorization for the proposed community it will be assumed that only one is "authorized."

Note 4: A "transmission facility" for a community is a station licensed to the community. Such a station provides a "transmission service" for that community.

17. In § 73.53, paragraph (b)(1) is revised and a new Note is added after paragraph (c) to read as follows:

§ 73.53 Requirements for authorization of antenna monitors.

* * * * *

(b) * * *

- (1) The monitor shall be designed to operate in the 535–1705 kHz band.

* * * * *

Note: In paragraph (b)(1) of this section, the requirement that monitors be capable of operation in the 535–1705 kHz band shall apply only to equipment manufactured after July 1, 1992. Use of a monitor in the 1605–1705 kHz band which is not approved for such

operation will be permitted pending the general availability of 535–1705 kHz band monitors if a manufacturer can demonstrate, in the interim, that its monitor performs in accordance with the standards in this section on these 10 channels.

18. In § 73.68, paragraph (d)(3) is revised to read as follows:

§ 73.68 Sampling systems for antenna monitors.

* * * * *

(d) * * *

(3) If that portion of the sampling system above the base of the towers is modified or components replaced, a partial proof of performance shall be executed in accordance with § 73.154 subsequent to these changes. The partial proof of performance shall be accompanied by common point impedance measurements made in accordance with § 73.54.

* * * * *

19. In § 73.69, paragraph (d)(4) is revised to read as follows:

§ 73.69 Antenna monitors.

* * * * *

(d) * * *

(4) If it cannot be established by the observations required in paragraph (d)(2) of this section that base current ratios and monitoring point values are within the tolerances or limits prescribed by the rules and the instrument of authorization, or if the substitution of the new antenna monitor for the old results in changes in these parameters, a partial proof of performance shall be executed and analyzed in accordance with § 73.154.

* * * * *

20. In § 73.72, paragraph (a) is revised to read as follows:

§ 73.72 Operating during the experimental period.

(a) An AM station may operate during the experimental period (the time between midnight and sunrise, local time) on its assigned frequency and with its authorized power for the routine testing and maintenance of its transmitting system, and for conducting experimentation under an experimental authorization, provided no interference is caused to other stations maintaining a regular operating schedule within such period.

* * * * *

21 § 73.88, a new Note is added after the introductory language to read as follows:

§ 73.88 Blanketing interference.

* * * * *

Note: For more detailed instructions concerning operational responsibilities of

licensees and permittees under this section, see § 73.318 (b), (c) and (d).

22. Section 73.99 is revised to read as follows:

§ 73.99 Presunrise service authorization (PSRA) and postsunset service authorization (PSSA).

(a) To provide maximum uniformity in early morning operation compatible with interference considerations, and to provide for additional service during early evening hours for Class D stations, provisions are made for presunrise service and postsunset service. The permissible power for presunrise or postsunset service authorizations shall not exceed 500 watts, or the authorized daytime or critical hours (whichever is less). Calculation of the permissible power shall consider only co-channel stations for interference protection purposes.

(b) Presunrise service authorizations (PSRA) permit:

(1) Class D stations operating on Mexican, Bahamian, and Canadian priority Class A clear channels to commence PSRA operation at 6 a.m. local time and to continue such operation until the sunrise times specified in their basic instruments of authorization.

(2) Class D stations situated outside 0.5 mV/m-50% skywave contours of co-channel U.S. Class A stations to commence PSRA operation at 6 a.m. local time and to continue such operation until sunrise times specified in their basic instruments of authorization.

(3) Class D stations located within co-channel 0.5 mV/m-50% skywave contours of U.S. Class A stations, to commence PSRA operation either at 6 a.m. local time, or at sunrise at the nearest Class A station located east of the Class D station (whichever is later), and to continue such operation until the sunrise times specified in their basic instruments of authorization.

(4) Class B and Class D stations on regional channels to commence PSRA operation at 6 a.m. local time and to continue such operation until local sunrise times specified in their basic instruments of authorization.

(c) Extended Daylight Saving Time Pre-Sunrise Authorizations:

(1) Between the first Sunday in April and the end of the month of April, Class D stations will be permitted to conduct pre-sunrise operation beginning at 6 a.m. local time with a maximum power of 500 watts (not to exceed the station's regular daytime or critical hours power), reduced as necessary to comply with the following requirements:

(i) Full protection is to be provided as specified in applicable international agreements.

(ii) Protection is to be provided to the 0.5 mV/m groundwave signals of co-channel U.S. Class A stations; protection to the 0.5 mV/m-50% skywave contours of these stations is not required.

(iii) In determining the protection to be provided, the effect of each interfering signal will be evaluated separately. The presence of interference from other stations will not reduce or eliminate the required protection.

(iv) Notwithstanding the requirements of paragraph (c)(1) (ii) and (iii) of this section, the stations will be permitted to operate with a minimum power of 10 watts unless a lower power is required by international agreement.

(2) The Commission will issue appropriate authorizations to Class D stations not previously eligible to operate during this period. Class D stations authorized to operate during this presunrise period may continue to operate under their current authorization.

(d) Postsunset service authorizations (PSSA) permit:

(1) Class D stations located on Mexican, Bahamian, and Canadian priority Class A clear channels to commence PSSA operation at sunset times specified in their basic instruments of authorization and to continue for two hours after such specified times.

(2) Class D stations situated outside 0.5 mV/m-50% skywave contours of co-channel U.S. Class A stations to commence PSSA operations at sunset times specified in their basic instruments of authorization and to continue for two hours after such specified times.

(3) Class D stations located within co-channel 0.5 mV/m-50% skywave contours of U.S. Class A stations to commence PSSA operation at sunset times specified in their basic instruments of authorization and to continue such operation until two hours past such specified times, or until sunset at the nearest Class A station located west of the Class D station, whichever is earlier. Class D stations located west of the Class A station do not qualify for PSSA operation.

(4) Class D stations on regional channels to commence PSSA operation at sunset times specified on their basic instruments of authorization and to continue such operation until two hours past such specified times.

(e) Procedural Matters. (1) Applications for PSRA and PSSA operation are not required. Instead, the

FCC will calculate the periods of such operation and the power to be used pursuant to the provisions of this section and the protection requirements contained in applicable international agreements. Licensees will be notified of permissible power and times of operation. Presunrise and Postsunset service authority permits operation on a secondary basis and does not confer license rights. No request for such authority need be filed. However, stations intending to operate PSRA or PSSA shall submit by letter, signed as specified in § 73.3513, the following information:

(i) Licensee name, station call letters and station location.

(ii) Indication as to whether PSRA operation, PSSA operation, or both, is intended by the station.

(iii) A description of the method whereby any necessary power reduction will be achieved.

(2) Upon submission of the required information, such operation may begin without further authority.

(f) Technical Criteria. Calculations to determine whether there is objectionable interference will be determined in accordance with the AM Broadcast Technical Standards, §§ 73.182 through 73.190, and applicable international agreements. Calculations will be performed using daytime antenna systems, or critical hours antenna systems when specified on the license. In performing calculations to determine assigned power and times for commencement of PSRA and PSSA operation, the following standards and criteria will be used:

(1) Class D stations operating in accordance with paragraphs (b)(1), (b)(2), (d)(1), and (d)(2) of this section are required to protect the nighttime 0.5 mV/m-50% skywave contours of co-channel Class A stations. Where a 0.5 mV/m-50% skywave signal from the Class A station is not produced, the 0.5 mV/m groundwave contour shall be protected.

(2) Class D stations are required to fully protect foreign Class B and Class C stations when operating PSRA and PSSA; Class D stations operating PSSA are required to fully protect U.S. Class B stations. For purposes of determining protection, the nighttime RSS limit will be used in the determination of maximum permissible power.

(3) Class D stations operating in accordance with paragraphs (d)(2) and (d)(3) of this section are required to restrict maximum 10% skywave radiation at any point on the daytime 0.1 mV/m groundwave contour of a co-channel Class A station to 25 μ V/m. The

location of the 0.1 mV/m contour of the Class A station will be determined by use of Figure M3, *Estimated Ground Conductivity in the United States*. When the 0.1 mV/m contour extends beyond the national boundary, the international boundary shall be considered the 0.1 mV/m contour.

(4) Class B and Class D stations on regional channels operating PSRA and PSSA (Class D only) are required to provide full protection to co-channel foreign Class B and Class C stations.

(5) Class D stations on regional channels operating PSSA beyond 6 p.m. local time are required to fully protect U.S. Class B stations.

(6) The protection that Class D stations on regional channels are required to provide when operating PSSA until 6 p.m. local time is as follows.

(i) For the first half-hour of PSSA operation, protection will be calculated at sunset plus 30 minutes at the site of the Class D station;

(ii) For the second half-hour of PSSA operation, protection will be calculated at sunset plus one hour at the site of the Class D station;

(iii) For the second hour of PSSA operation, protection will be calculated at sunset plus two hours at the site of the Class D station;

(iv) Minimum powers during the period until 6 p.m. local time shall be permitted as follows:

Calculated power	Adjusted minimum power
From 1 to 45 watts.....	50 watts.
Above 45 to 70 watts.....	75 watts.
Above 70 to 100 watts.....	100 watts.

(7) For protection purposes, the nighttime RSS limit will be used in the determination of maximum permissible power.

(g) Calculations made under paragraph (d) of this section may not take outstanding PSRA or PSSA operations into account, nor will the grant of a PSRA or PSSA confer any degree of interference protection on the holder thereof.

(h) Operation under a PSRA or PSSA is not mandatory, and will not be included in determining compliance with the requirements of § 73.1740. To the extent actually undertaken, however, presunrise operation will be considered by the FCC in determining overall compliance with past programming representations and station policy concerning commercial matter.

(i) The PSRA or PSSA is secondary to the basic instrument of authorization with which it is to be associated. The

PSRA or PSSA may be suspended, modified, or withdrawn by the FCC without prior notice or right to hearing, if necessary to resolve interference conflicts, to implement agreements with foreign governments, or in other circumstances warranting such action. Moreover, the PSRA or PSSA does not extend beyond the term of the basic authorization.

(j) The Commission will periodically recalculate maximum permissible power and times for commencing PSRA and PSSA for each Class D station operating in accordance with paragraph (c) of this section. The Commission will calculate the maximum power at which each individual station may conduct presunrise operations during extended daylight saving time and shall issue conforming authorizations. These original notifications and subsequent notifications should be associated with the station's authorization. Upon notification of new power and time of commencing operation, affected stations shall make necessary adjustments within 30 days.

(k) A PSRA and PSSA does not require compliance with §§ 73.45, 73.182, and 73.1560 where the operation might otherwise be considered as technically substandard. Further, the requirements of paragraphs (a)(5), (b)(2), (c)(2), and (d)(2) of § 73.1215 concerning the scale ranges of transmission system indicating instruments are waived for PSRA and PSSA operation except for the radio frequency ammeters used in determining antenna input power.

(1) A station having an antenna monitor incapable of functioning at the authorized PSRA and PSSA power when using a directional antenna shall take the monitor reading using an unmodulated carrier at the authorized daytime power immediately prior to commencing PSRA or PSSA operations. Special conditions as the FCC may deem appropriate may be included for PSRA or PSSA to insure operation of the transmitter and associated equipment in accordance with all phases of good engineering practice.

23. Section 73.150 is amended by revising paragraphs (a) introductory text, (b)(1) introductory text, (b)(2), (b)(3), (b)(5)(iv), (b)(5)(v), and (b)(6)(vii), by changing all references to miles in paragraph (b)(1)(i) to kilometers, and by revising equation 2 and the remaining formulas in paragraph (b)(1)(i) to read as follows:

§ 73.150 Directional antenna systems.

(a) For each station employing a directional antenna, all determinations of service provided and interference caused shall be based on the inverse

distance fields of the standard radiation pattern for that station. (As applied to nighttime operation the term "standard radiation pattern" shall include the radiation pattern in the horizontal plane, and radiation patterns at angles above this plane.)

(b) * * *

(1) The standard radiation pattern for the proposed antenna in the horizontal plane, and where pertinent, tabulated values for the azimuthal radiation patterns for angles of elevation up to and including 60 degrees, with a separate section for each increment of 5 degrees.

(i) * * *

where:

$E(\phi, \theta)_{th}$ represents the theoretical inverse distance fields at one kilometer for the given azimuth and elevation.

The standard radiation pattern shall be constructed in accordance with the following mathematical expression:

$$E(\phi, \theta)_{std} = 1.05 \sqrt{[E(\phi, \theta)_{th}]^2 + Q^2} \quad (\text{Eq. 2})$$

where:

$E(\phi, \theta)_{std}$ represents the inverse distance fields at one kilometer which are produced by the directional antenna in the horizontal and vertical planes. $E(\phi, \theta)_{th}$ represents the theoretical inverse distance fields at one kilometer as computed in accordance with Eq. 1, above.

Q is the greater of the following two quantities: $0.025g(\theta) E_{rss}$ or $10.0g(\theta) \sqrt{P_{kw}}$

where:

$g(\theta)$ is the vertical plane distribution factor, $f(\theta)$, for the shortest element in the array (see Eq. 2, above; also see § 73.190, Figure 5). If the shortest element has an electrical height in excess of 0.5 wavelength, $g(\theta)$ shall be computed as follows:

$$g(\theta) = \frac{\sqrt{1/f(\theta)^2 + 0.0625}}{1.030776}$$

E_{rss} is the root sum square of the amplitudes of the inverse fields of the elements of the array in the horizontal plane, as used in the expression for $E(\phi, \theta)_{th}$ (see Eq. 1, above), and is computed as follows:

$$E_{rss} = k \sqrt{\sum_{i=1}^n F_i^2}$$

P_{kw} is the nominal station power expressed in kilowatts, see § 73.14. If the nominal power is less than one kilowatt, P_{kw} five degrees, beginning with zero degrees representing true north, and, shall be plotted to the largest scale possible on unglazed letter-size paper (main engraving approximately 7" × 10") using only scale divisions and subdivisions of 1, 2, 2.5, or 5 times 10^{nth} . The horizontal plane pattern shall be plotted on polar coordinate paper, with the zero degree point corresponding to true north. Patterns for elevation angles above the horizontal plane may be plotted in polar or rectangular coordinates, with the pattern for each angle of elevation on a separate page. Rectangular plots shall begin and end at true north, with all azimuths labelled in increments of not less than 20 degrees. If a rectangular plot is used, the ordinate showing the scale for radiation may be logarithmic. Such patterns for elevation angles above the horizontal plane need be submitted only upon specific request by Commission staff. Minor lobe and null detail occurring between successive patterns for specific angles of elevation need not be submitted. Values of field strength on any pattern less than ten percent of the maximum field strength plotted on that pattern shall be shown on an enlarged scale. Rectangular plots with a logarithmic ordinate need not utilize an expanded scale unless necessary to show clearly the minor lobe and null detail.

(3) The effective (RMS) field strength in horizontal plane of $E(\phi, \theta)_{std}$, $E(\phi, \theta)_{th}$ and the root-sum-square (RSS) value of the inverse distance fields of the array elements at 1 kilometer, derived from the equation for $E(\phi, \theta)_{th}$. These values shall be tabulated on the page on which the horizontal plane pattern is plotted, which shall be specifically labelled as the Standard Horizontal Plane Pattern.

(4) * * *

(5) * * *

(iv) Where waiver of the content of this section is requested or upon request of the Commission staff, all assumptions made and the basis therefor, particularly with respect to the electrical height of the elements, current distribution along elements, efficiency of each element, and ground conductivity.

(v) Where waiver of the content of this section is requested, or upon

request of the Commission staff, those formulas used for computing $E(\phi, \theta)_{th}$ and $E(\phi, \theta)_{std}$. Complete tabulation of final computed data used in plotting patterns, including data for the determination of the RMS value of the pattern, and the RSS field of the array.

(6) * * *

(vii) Additional requirements relating to modified standard patterns appear in § 73.152(c)(3) and (c)(4).

* * *

24. Section 73.151 is amended by adding a new paragraph (b) to read as follows:

§ 73.151 Field strength measurements to establish performance of directional antennas.

* * *

(b) For stations authorized to operate with simple directional antenna systems (e.g., two towers) in the 1605-1705 kHz band, the measurements to support pattern RMS compliance referred to in paragraphs (a)(1)(ii) and (a)(1)(iii) of this section are not required. In such cases, measured radials are required only in the direction of short-spaced allotments, or in directions specifically identified by the Commission.

25. Section 73.152 is amended by adding new paragraphs (c)(2)(iv).

§ 73.152 Modification of directional antenna data.

* * *

(c) * * *

(2) * * *

(iv) Where the measured inverse distance field exceeds the value permitted by the standard pattern, and augmentation is allowable under the terms of this section, the requested amount of augmentation shall be centered upon the azimuth of the radial upon which the excessive radiation was measured and shall not exceed the following:

(A) The actual measured inverse distance field value, where the radial does not involve a required monitoring point.

(B) 120% of the actual measured inverse field value, where the radial has a monitoring point required by the instrument of authorization.

Whereas some pattern smoothing can be accommodated, the extent of the requested span(s) shall be minimized and in no case shall a requested augmentation span extend to a radial azimuth for which the analyzed measurement data does not show a need for augmentation.

* * *

26. Section 73.153 is amended by revising the last sentence in the paragraph to read as follows:

§ 73.153 Field strength measurements in support of applications or evidence at hearings.

* * * The antenna resistance measurements required by § 73.186 need not be taken or submitted.

27. Section 73.182 is revised to read as follows:

§ 73.182 Engineering standards of allocation.

(a) Sections 73.21 to 73.37, inclusive, govern allocation of facilities in the AM broadcast band 535-1705 kHz. § 73.21 establishes three classes of channels in this band, namely, clear, regional and local. The classes and power of AM broadcast stations which will be assigned to the various channels are set forth in § 73.21. The classifications of the AM broadcast stations are as follows:

(1) Class A stations operate on clear channels with powers no less than 10 kW nor greater than 50 kW. These stations are designed to render primary and secondary service over an extended area, with their primary services areas protected from objectionable interference from other stations on the same and adjacent channels. Their secondary service areas are protected from objectionable interference from co-channel stations. For purposes of protection, Class A stations may be divided into two groups, those located in any of the contiguous 48 States and those located in Alaska in accordance with § 73.25.

(i) The mainland U.S. Class A stations are those assigned to the channels allocated by § 73.25. The power of these stations shall be 50 kW. The Class A stations in this group are afforded protection as follows:

(A) Daytime. To the 0.1 mV/m groundwave contour from stations on the same channel, and to the 0.5 mV/m groundwave contour from stations on adjacent channels.

(B) Nighttime. To the 0.5 mV/m-50% skywave contour from stations on the same channels.

(ii) Class A stations in Alaska operate on the channels allocated by § 73.25 with a minimum power of 10 kW, a maximum power of 50 kW, and an antenna efficiency of 282 mV/m/kW at 1 kilometer. Stations operating on these channels in Alaska which have not been designated as Class A stations in response to licensee request will continue to be considered as Class B stations. During daytime hours a Class A station in Alaska is protected to the 100 μ V/m groundwave contour from co-channel stations. During nighttime hours, a Class A station in Alaska is

protected to the 100 $\mu\text{V}/\text{m}$ -50 percent skywave contour from co-channel stations. The 0.5 mV/m groundwave contour is protected both daytime and nighttime from stations on adjacent channels.

Note: In the Report and Order in MM Docket No. 83-807, the Commission designated 15 stations operating on U.S. clear channels as Alaskan Class A stations. Eleven of these stations already have Alaskan Class A facilities and are to be protected accordingly. Permanent designation of the other four stations as Alaskan Class A is conditioned on their constructing minimum Alaskan Class A facilities no later than December 31, 1989. Until that date or until such facilities are obtained, these four stations shall be temporarily designated as Alaskan Class A stations, and calculations involving these stations should be based on existing facilities but with an assumed power of 10 kW. Thereafter, these stations are to be protected based on their actual Alaskan Class A facilities. If any of these stations does not obtain Alaskan Class A facilities in the period specified, it is to be protected as a Class B station based on its actual facilities. These four stations may increase power to 10 kW without regard to the impact on co-channel Class B stations. However, power increases by these stations above 10 kW (or by existing Alaskan Class A stations beyond their current power level) are subject to applicable protection requirements for co-channel Class B stations. Other stations not on the original list but which meet applicable requirements may obtain Alaskan Class A status by seeking such designation from the Commission. If a power increase or other change in facilities by a station not on the original list is required to obtain minimum Alaskan Class A facilities, any such application shall meet the interference protection requirements applicable to an Alaskan Class A proposal on the channel.

(2) Class B stations are stations which operate on clear and regional channels with powers not less than 0.25 kW nor more than 50 kW. These stations render primary service only, the area of which depends on their geographical location, power, and frequency. It is recommended that Class B stations be located so that the interference received from other stations will not limit the service area to a groundwave contour value greater than 2.0 mV/m nighttime and to the 0.5 mV/m groundwave contour daytime, which are the values for the mutual protection between this class of stations and other stations of the same class.

Note: See §§ 73.21(b)(1) and 73.26(b) concerning power restrictions and classifications relative to Class B, Class C, and Class D stations in Alaska, Hawaii, Puerto Rico and the U.S. Virgin Islands. Stations in the above-named places that are reclassified from Class C to Class B stations under § 73.26(b) shall not be authorized to increase power to levels that would increase

the nighttime interference-free limit of co-channel Class C stations in the conterminous United States.

(3) Class C stations operate on local channels, normally rendering primary service to a community and the suburban or rural areas immediately contiguous thereto, with powers not less than 0.25 kW, nor more than 1 kW, except as provided in § 73.21(c)(1). Such stations are normally protected to the daytime 0.5 mV/m contour. On local channels the separation required for the daytime protection shall also determine the nighttime separation. Where directional antennas are employed daytime by Class C stations operating with more than 0.25 kW power, the separations required shall in no case be less than those necessary to afford protection, assuming nondirectional operation with 0.25 kW. In no case will 0.25 kW or greater nighttime power be authorized to a station unable to operate nondirectionally with a power of 0.25 kW during daytime hours. The actual nighttime limitation will be calculated. For nighttime protection purposes, Class C stations in the 48 contiguous United States may assume that stations in Alaska, Hawaii, Puerto Rico, and the U.S. Virgin Islands operating on 1230, 1240, 1340, 1400, 1450, and 1490 kHz are Class C stations.

(4) Class D stations operate on clear and regional channels with daytime powers of not less than 0.25 kW (or equivalent RMS field of 141 mV/m at one kilometer if less than 0.25 kW) and not more than 50 kW. Class D stations that have previously received nighttime authority operate with powers of less than 0.25 kW (or equivalent RMS fields of less than 141 mV/m at one kilometer) are not required to provide nighttime coverage in accordance with § 73.24(j) and are not protected from interference during nighttime hours. Such nighttime authority is permitted on the basis of full nighttime protection being afforded to all Class A and Class B stations.

(b) When a station is already limited by interference from other stations to a contour value greater than that normally protected for its class, the individual received limits shall be the established standard for such station with respect to interference from each other station.

(c) The four classes of AM broadcast stations have in general three types of service areas, i.e., primary, secondary and intermittent. (See § 73.14 for the definitions of primary, secondary, and intermittent service areas.) Class A stations render service to all three areas. Class B stations render service to a primary area but the secondary and intermittent service areas may be materially limited or destroyed due to

interference from other stations, depending on the station assignments involved. Class C and Class D stations usually have only primary service areas. Interference from other stations may limit intermittent service areas and generally prevents any secondary service to those stations which operate at night. Complete intermittent service may still be obtained in many cases depending on the station assignments involved.

(d) The groundwave signal strength required to render primary service is 2 mV/m for communities with populations of 2,500 or more and 0.5 mV/m for communities with populations of less than 2,500. See § 73.184 for curves showing distance to various groundwave field strength contours for different frequencies and ground conductivities, and also see § 73.183, "Groundwave signals."

(e) A Class C station may be authorized to operate with a directional antenna during daytime hours providing the power is at least 0.25 kW. In computing the degrees of protection which such antenna will afford, the radiation produced by the directional antenna system will be assumed to be no less, in any direction, than that which would result from non-directional operation using a single element of the directional array, with 0.25 kW.

(f) All classes of broadcast stations have primary service areas subject to limitation by fading and noise, and interference from other stations to the contours set out for each class of station.

(g) Secondary service is provided during nighttime hours in areas where the skywave field strength, 50% or more of the time, is 0.5 mV/m or greater (0.1 mV/m in Alaska). Satisfactory secondary service to cities is not considered possible unless the field strength of the skywave signal approaches or exceeds the value of the groundwave field strength that is required for primary service. Secondary service is subject to some interference and extensive fading whereas the primary service area of a station is subject to no objectionable interference or fading. Only Class A stations are assigned on the basis of rendering secondary service.

Note: Standards have not been established for objectionable fading because of the relationship to receiver characteristics. Selective fading causes audio distortion and signal strength reduction below the noise level, objectionable characteristics inherent in many modern receivers. The AVC circuits in the better designed receivers generally maintain the audio output at a sufficiently

constant level to permit satisfactory reception during most fading conditions.

(h) Intermittent service is rendered by the groundwave and begins at the outer boundary of the primary service area and extends to a distance where the signal strength decreases to a value that is too low to provide any service. This may be as low as a few $\mu\text{V}/\text{m}$ in certain areas and as high as several millivolts per meter in other areas of high noise level, interference from other stations, or objectionable fading at night. The intermittent service area may vary widely from day to night and generally varies over shorter intervals of time. Only Class A stations are protected from interference from other stations to the intermittent service area.

(i) Broadcast stations are licensed to operate unlimited time, limited time, daytime, share time, and specified hours. (See §§ 73.1710, 73.1725, 73.1720, 73.1715, and 73.1730.) Applications for new stations shall specify unlimited time operation only.

(j) Section 73.24 sets out the general requirements for modifying the facilities of a licensed station and for establishing a new station. Sections 73.24(b) and 73.37 include interference related provisions that be considered in connection with an application to modify the facilities of an existing station or to establish a new station. Section 73.30 describes the procedural steps required to receive an authorization to operate in the 1605–1705 kHz band.

(k) Objectionable nighttime interference from a broadcast station occurs when, at a specified field strength contour with respect to the desired station, the field strength of an undesired station (co-channel or first adjacent channel, after application of proper protection ratio) exceeds for 10% or more of the time the values set forth in these standards. The value derived from the root-sum-square of all interference contributions represents the extent of a station's interference-free coverage.

(l) With respect to the root-sum-square (RSS) values of interfering field strengths referred to in this section, calculation of nighttime interference-free service is accomplished by considering the signals on the three channels of concern (co- and first adjacencies) in order of decreasing magnitude, adding the squares of the values and extracting the square root of the sum, excluding those signals which are less than 50% of the RSS values of the higher signals already included.

(2) With respect to the root-sum-square values of interfering field

strengths referred to in this section, calculation of nighttime interference for non-coverage purposes is accomplished by considering the signals on the three channels of concern (co- and first adjacencies) in order of decreasing magnitude, adding the squares of the values and extracting the square root of the sum, excluding those signals which are less than 25% of the RSS values of the higher signals already included.

(3) With respect to the root-sum-square values of interfering field strengths referred to in this section, calculation is accomplished by considering the signals on the three channels of concern (co- and first adjacencies) in order of decreasing magnitude, adding the squares of the values and extracting the square root of the sum. The 0% exclusion method applies only to the determination of an improvement factor value for evaluating a station's eligibility for migration to the band 1605–1705 kHz.

(4) The RSS value of the nighttime interference-free contour will not be considered to be increased when a new interfering signal is added which is less than 50% of the RSS value of the interference from existing stations, and which at the same time is not greater than the smallest signal included in the RSS value of interference from existing stations.

(5) It is recognized that application of the above "50% exclusion" method (or any exclusion method using a per cent value greater than zero) of calculating the RSS interference may result in some cases in anomalies wherein the addition of a new interfering signal or the increase in value of an existing interfering signal will cause the exclusion of a previously included signal and may cause a decrease in the calculated RSS value of interference. In order to provide the Commission with more realistic information regarding gains and losses in service (as a basis for determination of the relative merits of a proposed operation) the following alternate method for calculating the proposed RSS values of interference will be employed wherever applicable.

(6) In the cases where it is proposed to add a new interfering signal which is not less than 50% (or 25%, depending on which study is being performed) of the RSS value of interference from existing stations or which is greater than the smallest signal already included to obtain this RSS value, the RSS limitation after addition of the new signal shall be calculated without excluding any signal previously included. Similarly, in cases where it is proposed to increase the value of one of the existing interfering signals which has been included in the

RSS value, the RSS limitation after the increase shall be calculated without excluding the interference from any source previously included.

(7) If the new or increased signal proposed in such cases is ultimately authorized, the RSS values of interference to other stations affected will thereafter be calculated by the "50% exclusion" (or 25% exclusion, depending on which study is being performed) method without regard to this alternate method of calculation.

(8) Examples of RSS interference calculations:

(i) Existing interferences:

Station No. 1—1.00 mV/m.
Station No. 2—0.60 mV/m.
Station No. 3—0.59 mV/m.
Station No. 4—0.58 mV/m.

The RSS value from Nos. 1, 2 and 3 is 1.31 mV/m; therefore interference from No. 4 is excluded for it is less than 50% of 1.31 mV/m.

(ii) Station A receives interferences from:

Station No. 1—1.00 mV/m.
Station No. 2—0.60 mV/m.
Station No. 3—0.59 mV/m.

It is proposed to add a new limitation, 0.68 mV/m. This is more than 50% of 1.31 mV/m, the RSS value from Nos. 1, 2 and 3. The RSS value of Station No. 1 and of the proposed station would be 1.21 mV/m which is more than twice as large as the limitation from Station No. 2 or No. 3. However, under the above provision the new signal and the three existing interferences are nevertheless calculated for purposes of comparative studies, resulting in an RSS value of 1.47 mV/m. However, if the proposed station is ultimately authorized, only No. 1 and the new signal are included in all subsequent calculations for the reason that Nos. 2 and 3 are less than 50% of 1.21 mV/m, the RSS value of the new signal and No. 1.

(iii) Station A receives interferences from:

Station No. 1—1.00 mV/m.
Station No. 2—0.60 mV/m.
Station No. 3—0.59 mV/m.

No. 1 proposes to increase the limitation it imposes on Station A to 1.21 mV/m. Although the limitations from stations Nos. 2 and 3 are less than 50% of the 1.21 mV/m limitation, under the above provision they are nevertheless included for comparative studies, and the RSS limitation is calculated to be 1.47 mV/m. However, if the increase proposed by Station No. 1 is authorized, the RSS value then calculated is 1.21 mV/m because Stations Nos. 2 and 3 are excluded in view of the fact that the limitations they impose are less than 50% of 1.21 mV/m.

Note: The principles demonstrated in the previous examples for the calculation of the 50% exclusion method also apply to calculations using the 25% exclusion method after appropriate adjustment.

(l) Objectionable nighttime interference from a station shall be considered to exist to a station when, at the field strength contour specified in paragraph (q) of this section with respect to the class to which the station belongs, the field strength of an interfering station operating on the same channel or on a first adjacent channel after signal adjustment using the proper protection ratio, exceeds for 10% or more of the time the value of the permissible interfering signal set forth opposite such class in paragraph (q) of this section.

(m) For the purpose of estimating the coverage and the interfering effects of stations in the absence of field strength measurements, use shall be made of Figure 8 of § 73.190, which describes the estimated effective field (for 1 kW power input) of simple vertical omnidirectional antennas of various heights with ground systems having at least 120 quarter-wavelength radials. Certain approximations, based on the curve or other appropriate theory, may be made when other than such antennas and ground systems are employed, but in any event the effective field to be employed shall not be less than the following:

Class of station	Effective field (at 1 km)
All Class A (except Alaskan).....	362 mV/m.
Class A (Alaskan), B and D.....	282 mV/m.
Class C.....	241 mV/m.

Note (1): When a directional antenna is employed, the radiated signal of a broadcasting station will vary in strength in different directions, possibly being greater than the above values in certain directions and less in other directions depending upon the design and adjustment of the directional antenna system. To determine the interference in any direction, the measured or calculated radiated field (unattenuated field strength at 1 kilometer from the array) must be used in conjunction with the appropriate propagation curves. (See § 73.185 for further discussion and solution of a typical directional antenna case.)

Note (2): For Class B stations in Alaska, Hawaii, Puerto Rico and the U.S. Virgin Islands, 241 mV/m shall be used.

(n) The existence or absence of objectionable groundwave interference from stations on the same or adjacent channels shall be determined by actual measurements made in accordance with the method described in § 73.186, or in the absence of such measurements, by reference to the propagation curves of § 73.184. The existence or absence of objectionable interference due to skywave propagation shall be determined by reference to Formula 2 in § 73.190.

(o) Computation of Skywave Field Strength Values:

(1) Fifty Percent Skywave Field Strength Values (Clear Channel). In computing the fifty percent skywave field strength values of a Class A clear channel station, use shall be made of Formula 1 of § 73.190, entitled "Skywave Field Strength" for 50 percent of the time.

(2) Ten Percent Skywave Field Strength Values. In computing the 10% skywave field strength for stations on a single signal or an RSS basis, Formula 2 in § 73.190 shall be used.

(3) Determination of Angles of Departure. In calculating skywave field strength for stations on all channels, the pertinent vertical angle shall be determined by use of the formula in § 73.190(d).

(p) The distance to any specified groundwave field strength contour for any frequency may be determined from the appropriate curves in § 73.184 entitled "Ground Wave Field Strength vs. Distance."

(q) Normally protected service contours and permissible interference signals for broadcast stations are as follows (for Class A stations, see also paragraph (a) of this section):

Class of station	Class of channel used	Signal strength contour of area protected from objectionable interference ¹ (μV/m)		Permissible interfering signal (μV/m)	
		Day ²	Night	Day ²	Night ³
A.....	Clear.....	SC 100	SC 500 50% SW AC 500 GW	SC 5 AC 250	SC 25 AC 250
A (Alaskan).....	do.....	SC 100 AC 500	SC 100 50% SW AC 500 GW	SC 5 AC 250	SC 5 AC 250
B.....	Clear.....	500	2000 ⁴	25	25
	Regional.....			AC 250	250
C.....	Local.....	500	Not presc. ⁴	SC 25	Not presc.
D.....	Clear.....	500	Not presc.	SC 25	Not presc.
	Regional.....			AC 250	

¹ When a station is already limited by interference from other stations to a contour of higher value than that normally protected for its class, this higher value contour shall be the established protection standard for such station. Changes proposed by Class A and B stations shall be required to comply with the following restrictions. Those interferers that contribute to another station's RSS using the 50% exclusion method are required to reduce their contribution to that RSS by 10%. Those lesser interferers that contribute to a station's RSS using the 25% exclusion method but do not contribute to that station's RSS using the 50% exclusion method may make changes not to exceed their present contribution. Interferers not included in a station's RSS using the 25% exclusion method are permitted to increase radiation as long as the 25% exclusion threshold is not equalled or exceeded. In no case will a reduction be required that would result in a contributing value that is below the pertinent value specified in the table. This note does not apply to Class C stations; or to the protection of Class A stations which are normally protected on a single signal, non-RSS basis.

² Groundwave.

³ Skywave field strength for 10 percent or more of the time.

⁴ During nighttime hours, Class C stations in the contiguous 48 States may treat all Class B stations assigned to 1230, 1240, 1340, 1400, 1450 and 1490 kHz in Alaska, Hawaii, Puerto Rico and the U.S. Virgin Islands as if they were Class C stations.

Note: SC= Same channel; AC= Adjacent channel; SW= Skywave; GW= Groundwave.

(r) The following table of logarithmic expressions is to be used as required for determining the minimum permissible

ratio of the field strength of a desired to an undesired signal. This table shall be used in conjunction with the protected

contours specified in paragraph (q) of this section.

Frequency separation of desired to undesired signals (kHz)	Desired Groundwave to:		Desired 50% Skywave to Undesired 10% Skywave (dB)
	Undesired groundwave (dB)	Undesired 10% Skywave (dB)	
0.....	26	26	26
10.....	6	6	not presc.

(s) Two stations, one with a frequency twice of the other, should not be assigned in the same groundwave service area unless special precautions are taken to avoid interference from the second harmonic of the station operating on the lower frequency. Additionally, in selecting a frequency, consideration should be given to the fact that occasionally the frequency assignment of two stations in the same area may bear such a relation to the intermediate frequency of some broadcast receivers as to cause "image" interference. However, since this can usually be rectified by readjustment of the intermediate frequency of such receivers, the Commission, in general, will not take this kind of interference into consideration when authorizing stations.

(t) The groundwave service of two stations operating with synchronized carriers and broadcasting identical programs will be subject to some distortion in areas where the signals from the two stations are of comparable strength. For the purpose of estimating coverage of such stations, areas in which the signal ratio is between 1:2 and 2:1 will not be considered as receiving satisfactory service.

Note: Two stations are considered to be operated synchronously when the carriers are maintained within 0.2 Hz of each other and they transmit identical program s.

28. Section 73.183 is amended by removing paragraph (b) and the Note; adding a note after paragraph (a); redesignating paragraphs (c) through (f) as (b) through (e); and revising newly redesignated paragraphs (c) and (e) to read as follows:

§ 73.183 Groundwave signals.

(a) * * *

Note: Groundwave field strength measurements will not be accepted or considered for the purpose of establishing that interference to a station in a foreign country other than Canada, or that the field strength at the border thereof, would be less than indicated by the use of the ground conductivity maps and engineering standards contained in this part and applicable international agreements. Satisfactory groundwave measurements offered for the purpose of demonstrating values of conductivity other than those shown by Figure M3 in problems involving protection of Canadian stations will be considered only if, after review thereof, the appropriate agency of the Canadian government notifies the Commission that they are acceptable for such purpose.

* * *

(c) Example of determining interference by the graphs in § 73.184:

It is desired to determine whether objectionable interference exists

between a proposed 5 kW Class B station on 990 kWz and an existing 1 kW Class B station on first adjacent channel, 1000 kHz. The distance between the two stations is 260 kilometers and both stations operate nondirectionally with antenna systems that produce a horizontal effective field of 282 in V/m at one kilometer. (See § 73.185 regarding use of directional antennas.) The ground conductivity at the site of each station and along the intervening terrain is 6 mS/m. The protection to Class B stations during daytime is to the 500 μ V/m (0.5 Vm) contour using a 6 dB protection factor. The distance to the 500 μ V/m groundwave contour of the 1 kW station is determined by the use of the appropriate curve in § 73.184. Since the curve is plotted for 100 mV/m at a 1 kilometer, to find the distance of the 0.5 mV/m contour of the 1 kW station, it is necessary to determine the distance to the 0.1773 m/Vm contour.

$$(100 \times 0.5 / 282 - 0.1773)$$

Using the 6 mS/m curve, the estimated radius of the 0.5 mV/m contour is 62.5 kilometers. Subtracting this distance from the distance between the two stations leaves 197.5 kilometers. Using the same propagation curve, the signal from the 5 kW station at this distance is seen to be 0.059 mV/m. Since a protection ratio of 6 dB, desired to undesired signal, applies to stations separated by 10 kHz, the undesired signal could have had a value of up to 0.25 mV/m without causing objectionable interference. For co-channel studies, a desired to undesired signal ratio of no less than 20:1 (26 dB) is required to avoid causing objectionable interference.

* * *

(e) Example of the use of the equivalent distance method;

It is desired to determine the distance to the 0.5 mV/m and 0.025 mV/m contours of a station on a frequency of 1000 kHz with an inverse distance field of 100 mV/m at one kilometer being radiated over a path having a conductivity of 10 mS/m for a distance of 20 kilometers, 5 mS/m for the next 30 kilometers and 15 mS/m thereafter. Using the appropriate curve in § 73.184, Graph 12, at a distance of 20 kilometers on the curve for 10 mS/m, the field strength is found to be 2.84 mV/m. On the 5mS/m curve, the equivalent distance to this field strength is 14.92 kilometers, which is 5.08 (20 - 14.92) kilometers nearer to the transmitter. Continuing on the propagation curve, the distance to a field strength of 0.5 mV/m is found to be 36.11 kilometers.

The actual length of the path travelled, however, is 41.19 (36.11 + 5.08) kilometers. Continuing on this propagation curve to the conductivity change at 44.92 (50.00 - 5.08) kilometers, the field strength is found to be 0.304 mV/m. On the 15 mS/m propagation curve, the equivalent distance to this field strength is 82.94 kilometers, which changes the effective path length by 38.02 (82.94 - 44.92) kilometers. Continuing on this propagation curve, the distance to a field strength of 0.025 mV/m is seen to be 224.4 kilometers. The actual length of the path travelled, however, is 191.46 (224.4 + 5.08 - 38.02) kilometers.

29. Section 73.184 is amended by revising paragraph (a) and the note following paragraph (b), removing paragraph (c), and revising and redesignating paragraphs (d), (e), and (f) as (c), (d), and (e), to read as follows:

§ 73.184 Groundwave field strength charts.

(a) Graphs 1 to 20 show, for each of 20 frequencies, the computed values of groundwave field strength as a function of groundwave conductivity and distance from the source of radiation. The groundwave field strength is considered to be that part of the vertical component of the electric field which has not been reflected from the ionosphere nor from the troposphere. These 20 families of curves are plotted on log-log graph paper and each is to be used for the range of frequencies shown thereon. Computations are based on a dielectric constant of the ground (referred to air as unity) equal to 15 for land and 80 for sea water and for the ground conductivities (expressed in mS/m) given on the curves. The curves show the variation of the groundwave field strength with distance to be expected for transmission from a vertical antenna at the surface of a uniformly conducting spherical earth with the groundwave constants shown on the curves. The curves are for an antenna power of such efficiency and current distribution that the inverse distance (unattenuated) field is 100 mV/m at 1 kilometer. The curves are valid for distances that are large compared to the dimensions of the antenna for other than short vertical antennas.

(b) * * *

Note: The computed values of field strength versus distance used to plot Graphs 1 to 20 are available in tabular form. For information on obtaining copies of these tabulations call or write the Consumer Affairs Office, Federal Communications Commission, Washington, DC 20554, (202) 632-7000.

(c) Provided the value of the dielectric constant is near 15, the ground conductivity curves of Graphs 1 to 20 may be compared with actual field strength measurement data to determine the appropriate values of the ground conductivity and the inverse distance field strength at 1 kilometer. This is accomplished by plotting the measured field strengths on transparent log-log graph paper similar to that used for Graphs 1 to 20 and superimposing the plotted graph over the Graph corresponding to the frequency of the station measured. The plotted graph is then shifted vertically until the plotted measurement data is best aligned with one of the conductivity curves on the Graph; the intersection of the inverse distance line on the Graph with the 1 kilometer abscissa on the plotted graph determines the inverse distance field strength at 1 kilometer. For other values of dielectric constant, the following procedure may be used to determine the dielectric constant on the ground, the ground conductivity and the inverse distance field strength at 1 kilometer. Graph 21 gives the relative values of groundwave field strength over a plane earth as a function of the numerical distance p and phase angle b . On graph paper with coordinates similar to those of Graph 21, plot the measured values of field strength as ordinates versus the corresponding distances from the antenna in kilometers as abscissae. The data should be plotted only for distances greater than one wavelength (or, when this is greater, five times the vertical height of the antenna in the case of a nondirectional antenna or 10 times the spacing between the elements of a directional antenna) and for distances less than $80f^{1/3}$ MHz kilometers (i.e., 80 kilometers at 1 MHz). Then, using a light box, place the plotted graph over Graph 21 and shift the plotted graph vertically and horizontally (making sure that the vertical lines on both sheets are parallel) until the best fit with the data is obtained with one of the curves on Graph 21. When the two sheets are properly lined up, the value of the field strength corresponding to the intersection of the inverse distance line of Graph 21 with the 1 kilometer abscissa on the data sheet is the inverse distance field strength at 1 kilometer, and the values of the numerical distance at 1 kilometer, p_1 , and of b are also determined. Knowing the values of b and p_1 (the numerical distance at one kilometer), we may substitute in the following approximate values of the ground conductivity and dielectric constant.

$$\chi \approx \frac{\pi}{p} \left(\frac{R}{\lambda} \right) \cos b \quad (\text{Eq. 1})$$

$(R/\lambda)_1$ = Number of wavelengths in 1 kilometer.

f_{MHz} = frequency expressed in megahertz.

$$\epsilon \approx \chi \tan b - 1 \quad (\text{Eq. 3})$$

ϵ = dielectric constant on the ground referred to air as unity.

First solve for χ by substituting the known values of p_1 , $(R/\lambda)_1$, and $\cos b$ in equation (1). Equation (2) may then be solved for δ and equation (3) for ϵ . At distances greater than $80f^{1/3}$ MHz kilometers the curves of Graph 21 do not give the correct relative values of field strength since the curvature of the earth weakens the field more rapidly than these plane earth curves would indicate. Thus, no attempt should be made to fit experimental data to these curves at the larger distances.

Note: For other values of dielectric constant, use can be made of the computer program which was employed by the FCC in generating the curves in Graphs 1 to 20. For information on obtaining a printout of this program, call or write the Consumer Affairs Office, Federal Communications Commission, Washington, DC 200554, (202) 632-7000.

(d) At sufficiently short distances (less than 55 kilometers at AM broadcast frequencies), such that the curvature of the earth does not introduce an additional attenuation of the waves, the curves of Graph 21 may be used to determine the groundwave field strength of transmitting and receiving antennas at the surface of the earth for any radiated power, frequency, or set of ground constants. First, trace the straight inverse distance line corresponding to the power radiated on transparent log-log graph paper similar to that of Graph 21, labelling the ordinates of the chart in terms of field strength, and the abscissae in terms of distance. Next, using the formulas given on Graph 21, calculate the value of the numerical distance, p , at 1 kilometer, and the value of b . Then superimpose the log-log graph paper over Graph 21, shifting it vertically until both inverse distance lines coincide and shifting it horizontally until the numerical distance at 1 kilometer on Graph 21 coincides with 1 kilometer on the log-log graph paper. The curve of Graph 21 corresponding to the calculated value of b is then traced on the log-log graph paper giving the field strength versus distance in kilometers.

(e) This paragraph consists of the following Graphs 1 to 20 and 21.

Note: The referenced graphs are not published in the CFR, nor will they be included in the Commission's automated rules system. For information on obtaining copies of the graphs call or write the Consumer Affairs Office, Federal Communications Commission, Washington, DC 20554, Telephone: (202) 632-7000.

30. Section 73.185 is amended by revising paragraph (b), by removing paragraph (c), by revising and redesignating paragraphs (d) and (e) as (c) and (d), by removing paragraphs (i) and (j), and revising and redesignating paragraphs (h) and (k) as (e) and (f), and by revising newly redesignated paragraph (f)(2) to read as follows:

§ 73.185 Computation of interfering signal.

(b) For skywave signals from stations operating on all channels, interference shall be determined from the appropriate formulas and Figure 6a contained in § 73.190.

(c) The formulas in § 73.190(d) depicted in Figure 6a of § 73.190, entitled "Angles of Departure versus Transmission Range" are to be used in determining the angles in the vertical pattern of the antenna of an interfering station to be considered as pertinent to transmission by one reflection. To provide for variation in the pertinent vertical angle due to variations of ionosphere height and ionosphere scattering, the curves 2 and 3 indicate the upper and lower angles within which the radiated field is to be considered. The maximum value of field strength occurring between these angles shall be used to determine the multiplying factor to apply to the 10 percent skywave field intensity value determined from Formula 2 in § 73.190. The multiplying factor is found by dividing the maximum radiation between the pertinent angles by 100 mV/m.

(d) Example of the use of skywave curves and formulas: Assume a proposed new Class B station from which interference may be expected is located at a distance of 724 kilometers from a licensed Class B station. The proposed station specifies geographic coordinates of $40^{\circ}00'00''\text{N}$ and $100^{\circ}00'00''\text{W}$ and the station to be protected is located at an azimuth of 45° true at geographic coordinates of $44^{\circ}26'05''\text{N}$ and $93^{\circ}32'54''\text{W}$. The critical angles of radiation as determined from Figure 6a of § 73.190 for use with Class B stations are 9.6° and 16.6° . If the vertical pattern of the antenna of the proposed station in the direction of the existing station is such that, between the angles of 9.6° and

16.6° above the horizon the maximum radiation is 260 mV/m at one kilometer, the value of the 50% field, as derived from Formula 1 of § 73.190, is 0.06217 mV/m at the location of the existing station. To obtain the value of the 10% field, the 50% value must be adjusted by a factor derived from Formula 2 of § 73.190. The value in this case is 8.42 dB. Thus, the 10% field is 0.1616 mV/m. Using this in conjunction with the co-channel protection ratio of 26 dB, the resultant nighttime limit from the proposed station to the licensed station is 3.232 mV/m.

(e) In the case of an antenna which is non-directional in the horizontal plane, the vertical distribution of the relative fields should be computed pursuant to § 73.160. In the case of an antenna which is directional in the horizontal plane, the vertical pattern in the great circle direction toward the point of reception in question must first be calculated. In cases where the radiation in the vertical plane, at the pertinent azimuth, contains a large lobe at a higher angle than the pertinent angle for one reflection, the method of calculating interference will not be restricted to that just described; each such case will be considered on the basis of the best knowledge available.

(f) In performing calculations to determine permissible radiation from stations operating presunrise or postsunset in accordance with § 73.99, calculated diurnal factors will be multiplied by the values of skywave field strength for such stations obtained from Formula 1 or 2 of § 73.190.

(1) * * *

(2) Constants used in calculating diurnal factors for the presunrise and postsunset periods are contained in paragraphs (f)(2) (i) and (ii) of this section respectively. The columns labeled T_{mp} represent the number of hours before and after sunrise and sunset at the path midpoint.

31. Section 73.187 is amended by revising paragraphs (a) and (b) to read as follows:

§ 73.187 Limitation on daytime radiation.

(a)(1) Except as otherwise provided in paragraphs (a)(2) and (3) of this section, no authorization will be granted for a Class B or Class D station on a frequency specified in § 73.25 if the proposed operation would radiate during the period of critical hours (the two hours after local sunrise and the two hours before local sunset) toward any point on the 0.1 mV/m contour of a co-channel U.S. Class A station, at or below the pertinent vertical angle determined from Curve 2 of Figure 6a of

§ 73.190, values in excess of those obtained as provided in paragraph (b) of this section.

(2) The limitation set forth in paragraph (a)(1) of this section shall not apply in the following cases:

(i) Any Class B or Class D operation authorized before November 30, 1959; or

(ii) For Class B and Class D stations authorized before November 30, 1959, subsequent changes of facilities which do not involve a change in frequency, an increase in radiation toward any point on the 0.1 mV/m contour of a co-channel U.S. Class A station, or the move of transmitter site materially closer to the 0.1 mV/m contour of such Class A station.

(3) A Class B or Class D station authorized before November 30, 1959, and subsequently authorized to increase daytime radiation in any direction toward the 0.1 mV/m contour of a co-channel U.S. Class A station (without a change in frequency or a move of transmitter site materially closer to such contour), may not, during the two hours after local sunrise or the two hours before local sunset, radiate in such directions a value exceeding the higher of:

(i) The value radiated in such directions with facilities last authorized before November 30, 1959, or

(ii) The limitation specified in paragraph (a)(1) of this section.

(b) To obtain the maximum permissible radiation for a Class B or Class D station on a given frequency from 640 through 990 kHz, multiply the radiation value obtained for the given distance and azimuth from the 500 kHz chart (Figure 9 of § 73.190) by the appropriate interpolation factor shown in the K_{500} column of paragraph (c) of this section; and multiply the radiation value obtained for the given distance and azimuth from the 1000 kHz chart (Figure 10 of § 73.190) by the appropriate interpolation factor shown in the K_{1000} column of paragraph (c) of this section. Add the two products thus obtained; the result is the maximum radiation value applicable to the Class B or Class D station in the pertinent directions. For frequencies from 1010 to 1580 kHz, obtain in a similar manner the proper radiation values from the 1000 and 1600 kHz charts (Figures 10 and 11 of § 73.190), multiply each of these values by the appropriate interpolation factors in the K'_{1000} and K'_{1600} columns in paragraph (c) of this section, and add the products.

* * *

32. Section 73.189 is amended by revising paragraphs (b)(2)(i), (b)(2)(ii),

(b)(2)(iii), (b)(3), and (b)(6), to read as follows:

§ 73.189 Minimum antenna heights or field strength requirements.

* * *

(b) * * *

(2) * * *

(i) Class C stations, and stations in Alaska, Hawaii, Puerto Rico and the U.S. Virgin Islands on 1230, 1240, 1340, 1400, 1450 and 1490 kHz that were formerly Class C and were redesignated as Class B pursuant to § 73.26(b), 45 meters or a minimum effective field strength of 241 mV/m for 1 kW (121 mV/m for 0.25 kW). (This height applies to a Class C station on a local channel only. Curve A shall apply to any Class C stations in the 48 conterminous States that are assigned to Regional channels.)

(ii) Class A (Alaska), Class B and Class D stations other than those covered in § 73.189(b)(2)(i), a minimum effective field strength of 282 mV/m for 1 kW.

(iii) Class A stations, a minimum effective field strength of 362 mV/m for 1 kW.

(3) The heights given on the graph for the antenna apply regardless of whether the antenna is located on the ground or on a building. Except for the reduction of shadows, locating the antenna on a building does not necessarily increase the efficiency and where the height of the building is in the order of a quarter wave the efficiency may be materially reduced.

* * *

(6) The main element or elements of a directional antenna system shall meet the above minimum requirements with respect to height or effective field strength. No directional antenna system will be approved which is so designed that the effective field of the array is less than the minimum prescribed for the class of station concerned, or in case of a Class A station less than 90 percent of the ground wave field which would be obtained from a perfect antenna of the height specified by Figure 7 of § 73.190 for operation on frequencies below 1000 kHz, and in the case of a Class B or Class D station less than 90 percent of the ground wave field which would be obtained from a perfect antenna of the height specified by Figure 7 of § 73.190 for operation on frequencies below 750 kHz.

33. Section 73.190 is amended by revising Figures 7 and 8 to reflect the use of metric units and by revising paragraphs (a), (b), (c), and (e) to read as follows:

§ 73.190 Engineering charts and related formulas.

(a) This section consists of the following Figures: 2, r3, 5, 6a, 7, 8, 9, 10, 11, 12, and 13. Additionally, formulas

that are directly related to graphs are included.

(b) Formula 1 is used for calculation of 50% skywave field strength values.

Formula 1. Skywave field strength, 50% of the time (at SS+6):

The skywave field strength, $F_c(50)$, for a characteristic field strength of 100 mV/m at 1 km is given by:

$$F_c(50) = (97.5 - 20 \log D) - (2\pi + 4.95 \tan^2 \phi_M) \sqrt{\left(\frac{D}{1000}\right)} \quad \text{dB}(\mu\text{V/m}) \quad (\text{Eq. 1})$$

The slant distance, D , is given by:

$$D = \sqrt{40,000 + d^2} \quad \text{km} \quad (\text{Eq. 2})$$

The geomagnetic latitude of the midpoint of the path, Φ_M , is given by:

$$\Phi_M = \arcsin [\sin a_M \sin 78.5^\circ + \cos a_M \cos 78.5^\circ \cos(69 + b_M)]$$

degrees (Eq. 3)
The short great-circle path distance, d , is given by:

$$d = 111.18 d^\circ \quad \text{km} \quad (\text{Eq. 4})$$

Where:

$$d^\circ = \arccos [\sin a_T \sin a_R + \cos a_T \cos a_R \cos(b_R - b_T)]$$

degrees (Eq. 5)

Where:

a_T is the geographic latitude of the transmitting terminal (degrees)
 a_R is the geographic latitude of the receiving terminal (degrees)

b_T is the geographic longitude of the transmitting terminal (degrees)

b_R is the geographic longitude of the receiving terminal (degrees)

a_M is the geographic latitude of the midpoint of the great-circle path (degrees) and is given by:

b_M is the geographic longitude of the midpoint of the great-circle path (degrees) and is given by:

$$a_M = 90 - \arccos \left[\sin a_R \cos \left(\frac{d^\circ}{2} \right) + \cos a_R \sin \left(\frac{d^\circ}{2} \right) \left(\frac{\sin a_T - \sin a_R \cos d^\circ}{\cos a_R \sin d^\circ} \right) \right] \quad (\text{Eq. 6})$$

$$b_M = b_R + k \left[\arccos \left(\frac{\cos \left(\frac{d^\circ}{2} \right) - \sin a_R \sin a_M}{\cos a_R \cos a_M} \right) \right] \quad (\text{Eq. 7})$$

Note (1): If $|\Phi_M|$ is greater than 60 degrees, equation (1) is evaluated for $|\Phi_M| = 60$ degrees.

Note (2): North and east are considered positive; south and west negative.

Note (3): In equation (7), $k = -1$ for west to east paths (i.e., $b_R > b_T$), otherwise $k = 1$.

(c) Formula 2 is used for calculation of 10% skywave field strength values.

Formula 2. Skywave field strength, 10% of the time (at SS+6):

The skywave field strength, $F_c(10)$, is given by:

$$F_c(10) = F_c(50) + \Delta \quad \text{dB}(\mu\text{V/m})$$

Where:

$$\Delta = 6 \text{ when } |\Phi_M| < 40$$

$$\Delta = 0.2 |\Phi_M| - 2 \text{ when } 40 \leq |\Phi_M| \leq 60$$

$$\Delta = 10 \text{ when } |\Phi_M| > 60$$

* * * * *

(e) In the event of disagreement between computed values using the formulas shown above and values obtained directly from the figures, the computed values will control.

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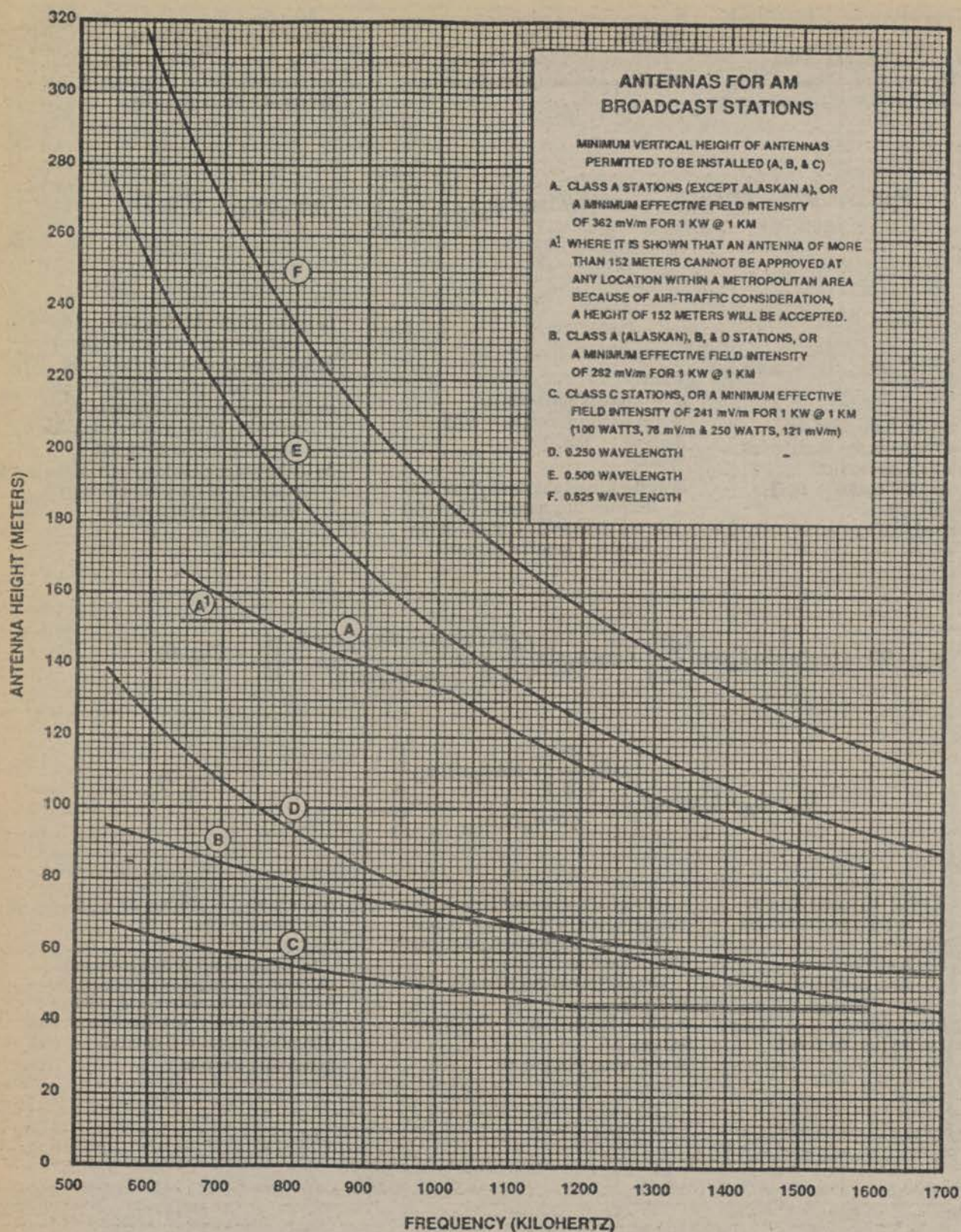


Figure 7

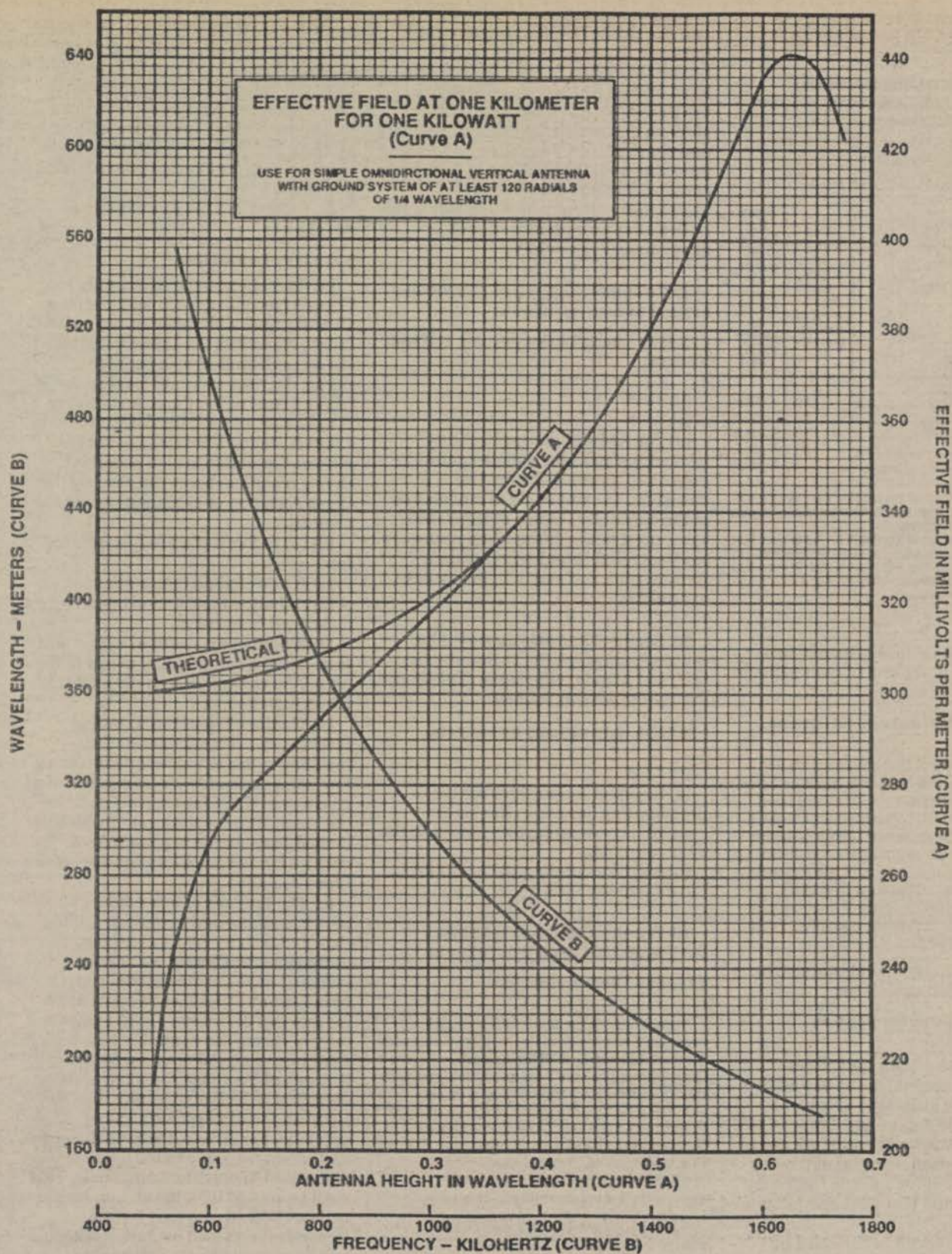


Figure 8

34. Section 73.1030 is amended by revising the table in paragraph (b) to read as follows:

§ 73.1030 Notifications concerning interference to radio astronomy, research and receiving installations.

(b) ***

Frequency range	Field strength in authorized band-width of service (mV/m)	Power flux density in authorized band-width of service (dBW/m ²) ¹
Below 540 kHz.....	10	-65.8
540 to 1700 kHz.....	20	-59.8
1.7 to 470 MHz.....	10	-65.8
470 to 890 MHz.....	30	-56.2
Above 890 MHz.....	1	-85.8

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

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

35. Section 73.1125 is amended by adding a note at the end of the section to read as follows:

§ 73.1125 Station main studio location.

Note: AM stations that simulcast on a frequency in the 535-1605 kHz band and on a frequency in the 1605-1705 kHz band need only have the studio be located within the 5 mV/m contour of the lower band operation during the term of the simultaneous operating authority. Upon termination of the 535-1605 kHz band portion of the dual frequency operation, the above rule shall then become applicable to the remaining operation in the 1605-1705 kHz band.

36. A new paragraph (c) is added to § 73.1150 to read as follows:

§ 73.1150 Transferring a station.

(c) Licensees and/or permittees authorized to operate in the 535-1605 kHz and in the 1605-1705 kHz band pursuant to the Report and Order in MM Docket No. 87-267 will not be permitted to assign or transfer control of the license or permit for a single frequency during the period that joint operation is authorized.

37. Section 73.1201 is amended by revising (c)(2) to read as follows:

§ 73.1201 Station identification.

(c) ***

(2) *Simultaneous AM (535-1605 kHz) and AM (1605-1705 kHz) broadcasts.* If the same licensee operates an AM broadcast station in the 535-1605 kHz band and an AM broadcast station in the 1605-1705 kHz band with both stations licensed to the same community and simultaneously broadcasts the same programs over the facilities of both such stations, station identification announcements may be made jointly for both stations for periods of such simultaneous operations.

38 Paragraph (b)(1)(ii) of § 73.1570 is revised to read as follows:

§ 73.1570 Modulation levels: AM, FM, and TV aural.

(b) ***

(1) ***

(ii) For AM stations transmitting telemetry signals for remote control or automatic transmission system operation, the amplitude of modulation of the carrier by the use of subaudible tones must not be higher than necessary to effect reliable and accurate data transmission and may not, in any case, exceed 6%.

39. Section 73.1650 is amended by revising paragraph (b)(2), introductory text, and adding paragraphs (b)(2)(i) and (b)(2)(ii) to read as follows:

§ 73.1650 International agreements.

(b) ***

(2) Regional Agreements for the Broadcasting Service in Region 2:

(i) MF Broadcasting 535-1605 kHz, Rio de Janeiro, 1981.

(ii) MF Broadcasting 1605-1705 kHz, Rio de Janeiro, 1988.

40. A note is added at the end of Section 73.1665 to read as follows:

§ 73.1665 Main transmitters.

Note: Pending the availability of AM broadcast transmitters that are type-accepted for use in the 1605-1705 kHz band, transmitters that are type-accepted for use in the 535-1605 kHz band as shown on the FCC's Radio Equipment List may be utilized in the 1605-1705 kHz band if it is shown that the requirements of § 73.44 have been met. FCC approval of the manufacturer's application for type-acceptance will supersede the applicability of this note.

41. Paragraph (c) in § 73.1705 is revised to read as follows:

§ 73.1705 Time of operation.

(c) AM stations in the 535-1705 kHz band will be licensed for unlimited time.

In the 535-1605 kHz band, stations that apply for share time and specified hours operations may also be licensed. AM stations licensed to operate daytime-only and limited-time may continue to do so; however, no new such stations will be authorized, except for fulltime stations that reduce operating hours to daytime-only for interference reduction purposes.

42. Section 73.1725 is revised to read as follows:

§ 73.1725 Limited time.

(a) Operation is applicable only to Class B (secondary) AM stations on a clear channel with facilities authorized before November 30, 1959. Operation of the secondary station is permitted during daytime and until local sunset if located west of the Class A station on the channel, or until local sunset at the Class A station if located east of that station. Operation is also permitted during nighttime hours not used by the Class A station or other stations on the channel.

(b) No authorization will be granted for:

- (1) A new limited time station;
- (2) A limited time station operating on a changed frequency;
- (3) A limited time station with a new transmitter site materially closer to the 0.1 mV/m contour of a co-channel U.S. Class A station; or
- (4) Modification of the operating facilities of a limited time station resulting in increased radiation toward any point on the 0.1 mV/m contour of a co-channel U.S. Class A station during the hours after local sunset in which the limited time station is permitted to operate by reason of location east of the Class A station.

(c) The licensee of a secondary station which is authorized to operate limited time and which may resume operation at the time the Class A station (or stations) on the same channel ceases operation shall, with each application for renewal of license, file in triplicate a copy of its regular operating schedule. It shall bear a signed notation by the licensee of the Class A station of its objection or lack of objection thereto. Upon approval of such operating schedule, the FCC will affix its file mark and return one copy to the licensee authorized to operate limited time. This shall be posted with the station license and considered as a part thereof. Departure from said operating schedule will be permitted only pursuant to § 73.1715 (Share time).

43. Section 73.1740 is amended by revising paragraph (a)(1)(i) to read as follows:

§ 73.1740 Minimum operating schedule.

(a) * * *

(1) * * *

(i) Class D stations which have been authorized nighttime operations need comply only with the minimum requirements for operation between 6 a.m. and 6 p.m., local time.

44. Paragraph (a) of § 73.3516 is revised to read as follows:

§ 73.3516 Specification of facilities.

(a) An application for facilities in the AM, FM, or TV broadcast services or low power TV service shall be limited to one frequency, or channel, and no application will be accepted for filing if it requests an alternate frequency or channel. Applications specifying split frequency AM operations using one frequency during daytime hours complemented by a different frequency during nighttime hours will not be accepted for filing.

45. New paragraphs (c) and (d) and Notes 1 and 2 are added to § 73.3517 to read as follows:

§ 73.3517 Contingent applications.

(c) Upon payment of the filing fees prescribed in § 1.1111 of this chapter, the Commission will accept two or more applications filed by existing AM licensees for modification of facilities that are contingent upon granting of both, if granting such contingent applications will reduce interference to one or more AM stations or will otherwise increase the area of interference-free service. The applications must state that they are filed pursuant to an interference reduction arrangement and must cross-reference all other contingent applications.

(d) Modified proposals curing conflicts between mutually exclusive clusters of applications filed in accordance with paragraphs (c) of this section will be accepted for 60 days following issuance of a public notice identifying such conflicts.

Note 1: No application to move to a frequency in the 1605-1705 kHz band may be part of any package of contingent applications associated with a voluntary agreement.

Note 2: In cases where no modified proposal is filed pursuant to paragraph (d) of this section, the Commission will grant the application resulting in the greatest net interference reduction.

46. Paragraph (i) in § 73.3550 is revised to read as follows:

§ 73.3550 Requests for new or modified call sign assignments.

(i) Stations in different broadcast services (or operating jointly in the 535-1605 kHz band and in the 1605-1705 kHz band) which are under common control may request that their call signs be conformed by the assignment of the same basic call sign if that call sign is not being used by a non-commonly owned station. For the purposes of this paragraph, 50% or greater common ownership shall constitute a prima facie showing of common control.

47. Section 73.3555 is amended by revising Note 4 and adding new Notes 8, 9 and 10 to read as follows:

§ 73.3555 Multiple ownership.

Note 4: Paragraphs (a) through (d) of this section will not be applied to require divestiture, by any licensee, of existing facilities, and will not apply to applications for increased power for Class C stations, to applications for assignment of license or transfer of control filed in accordance with § 73.3540(f) or § 73.3541(b) of this part, or to applications for assignment of license or transfer of control to heirs or legatees by will or intestacy if no new or increased overlap would be created between commonly owned, operated, or controlled broadcast stations in the same service and if no new encompassment of communities proscribed in paragraphs (b) and (c) of this section as to commonly owned, operated, or controlled broadcast stations or daily newspapers would result. Said paragraphs will apply to all applications for new stations, to all other applications for assignment or transfer, and to all applications for major changes in existing stations except major changes that will result in overlap of contours of broadcast stations in the same service with each other no greater than already existing. (The resulting areas of overlap of contours of such broadcast stations with each other in such major change cases may consist partly or entirely of new terrain. However, if the population in the resulting overlap areas substantially exceeds that in the previously overlap areas, the Commission will not grant the application if it finds that to do so would be against the public interest, convenience, or necessity.) Commonly owned, operated, or controlled broadcast stations, with overlapping contours or with community-encompassing contours prohibited by this section may not be assigned or transferred to a single person, group, or entity, except as provided above in this note. If a commonly owned, operated, or controlled broadcast station and daily newspaper fall within the encompassing proscription of this section, the station may not be assigned to a single person, group or entity if the newspaper is being simultaneously sold to such single person, group or entity.

Note 8: Paragraph (a)(1) of this section will not apply to an application for an AM station

license in the 535-1605 kHz band where grant of such application will result in the overlap of 5 mV/m groundwave contours of the proposed station and that of another AM station in the 535-1605 kHz band that is commonly owned, operated or controlled if the applicant shows that a significant reduction in interference to adjacent or co-channel stations would accompany such common ownership. Such AM overlap cases will be considered on a case-by-case basis to determine whether common ownership, operation or control of the stations in question would be in the public interest. Applicants in such cases must submit a contingent application for the major or minor facilities change needed to achieve the interference reduction along with the application which seeks to create the 5 mV/m overlap situation.

Note 9: Paragraph (a)(1) of this section will not apply to an application for an AM station license in the 1605-1705 kHz band where grant of such application will result in the overlap of the 5 mV/m groundwave contours of the proposed station and that of another AM station in the 535-1605 kHz band that is commonly owned, operated or controlled. Paragraphs (d)(1)(i) and (d)(1)(ii) of this section will not apply to an application for an AM station license in the 1605-1705 kHz band by an entity that owns, operates, controls or has a cognizable interest in AM radio stations in the 535-1605 kHz band.

Note 10: Authority for joint ownership granted pursuant to Note 9 will expire at 3 a.m. local time on the fifth anniversary of the date of issuance of a construction permit for an AM radio station in the 1605-1705 kHz band.

48. Section 73.3564 is amended by adding a new paragraph (e) to read as follows:

§ 73.3564 Acceptance of applications.

(e) Applications for operation in the 1605-1705 kHz band will be accepted only if filed pursuant to the terms of § 73.30(b).

§ 73.3570 [Redesignated as § 73.23]

49. Section 73.3570 is redesignated as § 73.23.

50. Section 73.3571 is amended by revising paragraphs (a), and (a)(1), by adding a new paragraph (a)(3), by removing paragraphs (d)(1) and (e), by revising and redesignating paragraphs (d)(2), (d)(3) and (d)(4) as (d)(1), (d)(2) and (d)(3), by redesignating paragraphs (f) through (i) as (e) through (h) and revising newly redesignated paragraphs (f) and (h), by redesignating paragraphs (j)(1), (j)(2), (j)(3), and (j)(4) as (i)(1), (i)(2), (i)(3), and (i)(4) and revising the text of newly redesignated paragraph (i)(1), and be redesignating paragraphs (k) and (l) as paragraphs (j) and (k) to read as follows:

§ 73.3571 Processing of AM broadcast station applications.

(a) Applications for AM broadcast facilities are divided into three groups.

(1) In the first group are applications for new stations or for major changes in the facilities of authorized stations. A major change is any increase in power except where accompanied by a complimentary reduction of antenna efficiency which leads to the same amount, or less, radiation in all directions (in the horizontal and vertical planes when skywave propagation is involved, and in the horizontal plane only for daytime considerations), relative to the presently authorized radiation levels, or any change in frequency, hours of operation, or community of license. However, the FCC may, within 15 days after the acceptance for filing of any other application for modification of facilities, advise the applicant that such application is considered to be one for a major change and therefore is subject to the provisions of §§ 73.3580 and 1.1111 of this chapter pertaining to major changes.

(2) * * *

(3) The third group consists of applications for operation in the 1605-1705 kHz band which are filed subsequent to Commission notification that allotments have been awarded to petitioners under the procedure specified in § 73.30.

(d) Applications proposing to increase the power of an AM station are subject to the following requirements:

(1) In order to be acceptable for filing, any application which does not involve a change in site must propose at least a 20% increase in the station's nominal power.

(2) Applications involving a change in site are not subject to the requirements in paragraph (d)(1) of this section.

(3) Applications for nighttime power increases for Class D stations are not subject to the requirements of this section and will be processed as minor changes.

(f) Applications for change of license to change hours of operation of a Class C station, to decrease hours of operation of any other class of station, or to change station location involving no change in transmitter site will be considered without reference to the processing line.

(h) When an application which has been designated for hearing has been removed from the hearing docket, the application will be returned to its proper

position (as determined by the file number) in the processing line. Whether or not a new file number will be assigned will be determined pursuant to paragraph (i) of this section, after the application has been removed from the hearing docket.

(i)(1) A new file number will be assigned to an application for a new station, or for major changes in the facilities of an authorized station, when it is amended to change frequency, to increase power, to increase hours of operation, or to change station location. Any other amendment modifying the engineering proposal, except an amendment regarding the type of equipment specified, will also result in the assignment of a new file number unless such amendment is accompanied by a complete engineering study showing that the amendments would not involve new or increased interference problems with existing stations or other applications pending at the time the amendment is filed. If, after submission and acceptance of such an engineering amendment, subsequent examination indicates new or increased interference problems within either existing stations or other applications pending at the time the amendment was received at the FCC, the application will then be assigned a new file number and placed in the processing line according to the numerical sequence of the new file number.

51. New paragraph (c) is added to § 73.3598 to read as follows:

§ 73.3598 Period of construction.

(c) An existing AM station operating in the 535-1605 kHz band that receives a conditional permit to operate in the 1605-1705 kHz band; such permit shall specify a period of not more than 18 months from the date of issuance of the original construction permit within which construction shall be completed and application for license filed.

§ 73.4160 [Removed]

52. Section 73.4160 is removed.

53. Section 73.4255 is revised to read as follows:

§ 73.4255 Tax certificates: Issuance of.

(a) See Public Notice, FCC 76-337, dated April 21, 1976. 59 FCC 2d, 91; 41 FR 17605, April 27, 1976.

(b) See Report and Order MM Docket 87-267, FCC 91-303 adopted, September 26, 1991.

Part 90 of title 47 of the CFR is amended as follows:

54. The authority citation for part 90 continues to read as follows:

Authority: 47 U.S.C. 154 and 303.

55. Section 90.17(b) is amended by removing the entry for 1610 kHz and adding the entry for 540 through 1700 kHz to the Table of Frequencies to read as follows:

§ 90.17 Local Government Radio Service.

(b) * * *

Local government radio service frequency table

Frequency or band (kHz)	Class of station(s)	Limitations
530	Base (T.I.S.)	23
540-1700	do	23
2726	Base or Mobile	1

56. Section 90.242 is amended by revising paragraph (a) introductory text, the first sentence of (a)(2)(i), and (a)(2)(ii) to read as follows:

§ 90.242 Travelers information stations.

(a) The frequencies 530 through 1700 kHz in 10 kHz increments may be assigned to the Local Government Radio Service for the operation of Travelers Information Stations subject to the following conditions and limitations.

(2) * * *

(i) A statement certifying that the transmitting site of the Travelers Information Station will be located at least 15 km (9.3 miles) measured orthogonally outside the measured 0.5 mV/m daytime contour (0.1 mV/m for Class A stations) of any AM broadcast station operating on a first adjacent channel or at least 130 km (80.6 miles) outside the measured 0.5 mV/m daytime contour (0.1 mV/m for Class A stations) of any AM broadcast station operating on the same channel, or, if nighttime operation is proposed, outside the theoretical 0.5 mV/m-50% nighttime skywave contour of a U.S. Class A station. * * *

(ii) In consideration of possible cross-modulation and inter-modulation interference effects which may result from the operation of a Travelers Information Station in the vicinity of an AM broadcast station on the second or third adjacent channel, the applicant shall certify that he has considered these possible interference effects and, to the best of his knowledge, does not foresee interference occurring to broadcast stations operating on second or third adjacent channels.

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