

Before the
Federal Communications Commission
Washington, D.C. 20554

MM Docket No. 88-375

In the Matter of

Amendment of Part 73 of the Rules	RM-6236
to provide for an additional FM	RM-6237
station class (Class C3) and to	
increase the maximum transmitting	
power for Class A FM stations	

SECOND REPORT AND ORDER

Adopted: July 13, 1989; Released: August 18, 1989

By the Commission: Commissioner Dennis issuing a statement.

INTRODUCTION

1. The Commission has under consideration in this proceeding proposed amendments to Part 73 of its Rules governing the broadcast services. In this *Second Report and Order*, we are increasing the maximum permitted effective radiated power for Class A FM broadcast stations from 3000 to 6000 watts. To reduce any adverse effect this power increase might otherwise have on the service of Class B and B1 stations, we are adopting rules that will implement the power increase on a selective basis, rather than as a blanket increase. We are also revising the minimum distance separation requirements applicable to Class A stations in order to maintain the current level of protection for the service of FM stations of all classes. Existing stations at locations that do not meet one or more of the revised requirements are "grandfathered." That is, we will allow modifications and relocations of such stations under the previous power limit and distance separation requirements, or under technical conditions that present no greater interference potential than the previous limit.

2. Under these new rules, the majority of existing Class A FM broadcast stations will be able to operate with increased power. We are adopting licensing procedures that will allow many Class A stations to begin operation with increased power prior to filing an application for such operation, and thus avoid undue delays. We believe that this power increase will serve the public interest by enabling Class A stations to provide better service to their listeners and by expanding the potential audience for Class A stations (many of which provide specialized programming).

BACKGROUND

3. On July 20, 1988, we initiated this proceeding by adopting a *Notice of Proposed Rule Making* ("Notice")¹ setting forth two major technical rule making proposals, both intended to permit improvements in the facilities of the majority of Class A FM broadcast stations in the

United States.² Specifically, we proposed the creation of a new intermediate class of FM broadcast stations (Class C3), and a general increase in the maximum permitted effective radiated power (ERP) for Class A FM broadcast stations, from 3000 to 6000 watts.

4. In response to the *Notice*, we received 98 formal comments, 16 reply comments, and several hundred informal letters and inquiries.³ The proposal to create a new intermediate FM station classification (Class C3) received virtually unanimous support from commenting parties. The proposal to increase the maximum permitted transmitting power for Class A FM broadcast stations is also generally supported by the commenters. However, broadcast station licensees remain sharply divided as to whether all Class A stations, or only those able to meet increased distance separation requirements, should be allowed to increase power.

5. On March 30, 1989, we adopted a *First Report and Order* ("*First Report*")⁴ amending our rules to provide for the new Class C3 FM broadcast station class. In our *First Report*, we found that the addition of this new class to our FM allotment and assignment system would indeed further the public interest. We indicated then that we would consider the matter of the Class A power increase separately.

SUMMARY OF COMMENTS

6. *Benefit of Increased Class A Transmitting Power.* We tentatively concluded in the *Notice* that a modest increase in the maximum permitted Class A transmitting power would result in a net increase in service to the listening public, and that expansion of the potential audience of Class A stations would likely enhance beneficial competition and program diversity in the FM service.⁵ Noting that many Class A stations now compete directly with larger Class B1, B, C2, C1, and C FM stations in the same communities, we stated our belief that the proposed power increase could potentially offset some of the technical disadvantages currently faced by Class A stations.⁶

7. We also stated that, in view of the very important contribution made by Class A stations through their service to smaller or specialized programming audiences, allowing these licensees to improve their technical facilities would enable them to better serve the public.⁷ In this connection, we noted that increased power offers two distinct benefits:

- 1) The stations' existing audiences would receive a stronger, and therefore more reliable signal.
- 2) A usable signal would be extended into new areas and thereby offer an additional choice to the radio audience in those areas.⁸

8. Most of the commenters agreed with our assessment of the benefits of increased power for Class A FM stations. Additionally, the vast majority of comments submitted by licensees of Class A stations related specific coverage problems experienced by their particular stations which they believe the proposed power increase would help to solve. These problems generally fall into the categories of terrain shielding and obstruction shadowing, temperature inversions and other propagation vagaries, building penetration difficulty, and signal domination⁹ by larger class FM stations.

9. Agreeing with our contention that the Class A power increase would enhance beneficial competition, James J. Ganley of Class A station WWVY in Columbus, Indiana observes that "in many markets such as ours there is a local competing Class B FM station also licensed to the same city. While we both provide service to the same immediate area and we both pay similar competitive salaries for air talent, sales, office and engineering help - they have over sixteen times as much power as we do." However, one commenter disagrees with the argument that FM stations operating with current Class A facilities can not compete with larger FM stations. Greater Media, Inc. ("Greater Media"), which owns 5 Class B FM stations and 2 Class A FM stations, including Class A station WMGQ in New Brunswick, New Jersey, states that its successful station WMGQ competes directly with numerous high-power stations in the highly competitive Trenton-New York corridor.¹⁰ In reply to this example, the New Jersey Class A Broadcasters Association ("New Jersey") points out that WMGQ serves a densely populated area with almost 1 million people within its 1 mV/m contour, thus implying that it is not a typical Class A station.¹¹

10. Some of the commenters state that a power increase is needed to enable Class A stations to provide service to areas where population growth or movement has occurred. Buckley Broadcasting Corporation ("Buckley") owns 14 radio stations - 5 AM stations and 9 FM stations, of which 2 are Class A FM stations (WYNZ, Westbrook, Maine and KGIL, San Fernando, California). Buckley states that its Class A stations are no longer able to cover their communities of license because of the growth these communities have experienced, both in population and land area. A similar argument is made by Barry Broadcasting Company ("Barry"), which operates WBCH-FM in Hastings, Michigan. According to Barry, local business in Hastings has gravitated towards Grand Rapids, and as a result, Barry has become dependent on the Grand Rapids market and the commuting audience which travels daily between the two communities. Barry indicates that the proposed power increase would greatly assist it in serving the needs of that audience. Barry and Drexel Hill Associates, Inc. ("Drexel"), licensee of Class A stations WDHA (Dover, New Jersey) and WIIS (Key West, Florida), both assert that a power increase would assist in overcoming interference from ignition noise and propagation effects such as "dead spots" and "picket fencing."¹²

11. Other commenters suggest that the power increase will help their stations overcome terrain related coverage problems. For example, Pulaski Broadcasting, Inc., licensee of Class A FM station WINJ (Pulaski, Tennessee), states that its current facilities are inadequate because of hilly terrain and that the additional power would allow WINJ to add coverage to a nearby small community, Ardmore. Another Class A station licensee, Brattleboro Broadcasters, Inc. ("Brattleboro"), (WKVT-FM, Brattleboro, Vermont) cites wide variations in average terrain as a major problem it faces, adding that its measured 1 mV/m contour does not meet projections. Brattleboro states that it provides service with a local focus and that the power increase proposed would improve its ability to deliver this service.

12. Dickerson Broadcasting, Inc. licensee of Class A station WEAG, in Stauke, Florida, claims that it experiences interference from distant stations during temperature inversions throughout much of the year, and that the power increase would counteract this problem in most

cases. Another commenter, Nutmeg Broadcasting Company ("Nutmeg"), licensee of Class A station WILI in Willimantic, Connecticut, claims that it receives interference as close as 7 miles from its antenna tower from a first adjacent New Bedford, Massachusetts Class B station approximately 70 miles away. Nutmeg alleges that the signal from this Class B station can overpower its signal even within its predicted 3.16 mV/m (70 dBu) contour. Nutmeg states that the power boost proposed would allow WILI to fill in some weak areas within its predicted 70 dBu contour, and extend 60 dBu coverage to the village of Stafford Springs, Connecticut.¹³ Nutmeg notes that it is not technically feasible to add new stations in Connecticut and therefore any additional radio service must come from existing stations. Roger P. Pasquier, President of KOCN, a Class A FM station in Pacific Grove, California, comments that severe temperature inversions occur along the coastline of that state, which, combined with terrain blockage, "shut down" KOCN's signal during certain seasons of the year. Pasquier believes that the proposed power increase would help to offset this problem.

13. Hanson Communications, Inc. ("Hanson"), licensee of Class A FM station WGMX in Norwalk, Connecticut, cites problems with building penetration, shadowing, and temperature inversions. Hanson states that a power increase to 6000 watts would be meaningful and helpful to WGMX in dealing with these problems, and would result in improved reception within its primary service area. Albany Broadcasting, Inc. ("ABI"), which operates WQBK-FM in Rensselaer, New York, says that some of its long-time listeners have complained that they can no longer receive a clear signal from WQBK-FM. ABI suggests that this is due to shadowing caused by the construction of large buildings, and that a power increase will help to restore service to these listeners. The Jet Broadcasting Company, Inc. ("Jet"), licensee of Class A station WJET in Erie, Pennsylvania, operates with a relatively large antenna height above average terrain (204 meters) to avoid terrain shadowing problems in the southern part of its Erie market. However, the power reduction required for operation with this height causes substantial difficulties with penetration of concrete and steel buildings, according to Jet. The power increase would improve thus improve in-building reception of WJET.

14. The Massachusetts Class A Broadcasters Association ("Massachusetts") summarizes the need for increased Class A power:

" . . . Class A stations here have matured as a rural but increasingly suburban medium. Population growth has . . . (filled) the open tracts of virtually every small town with housing developments. Where once our listeners were concentrated geographically in a core community, now they are dispersed throughout the . . . countryside. Twenty years ago many residents worked where they lived. Today they commute miles to offices in Boston, Worcester, Springfield A twenty mile commute to 'shop the mall' is a common journey. These demographic changes are . . . an intrinsic part of regional growth But they spell distress and perhaps disaster for Class A broadcasters who remain constrained by technical regulations invented in a world 26 years past Our listeners are leaving us. Generally, they don't go far. A 30 mile commute to work . . . a new home in a town 10 or

15 miles distant. But they can't take us with them because they can't hear us. Coverage which was good enough 20 years ago will no longer suffice."¹⁴

15. *Class A Maximum Facilities.* In the *Notice*, we proposed to increase the maximum permitted ERP for Class A FM broadcast stations from 3000 to 6000 watts, while leaving the reference antenna height above average terrain at 100 meters (328 feet).¹⁵ This combination produces a class contour distance¹⁶ of 28 kilometers (18 miles). However, we invited comments as to whether a different maximum ERP limit (e.g. 5000 watts) or a different maximum ERP and reference HAAT combination (e.g. 4000 watts and 125 meters) would be more appropriate.¹⁷

16. Very few commenters addressed this issue, and those that did supported the proposed 6000 watt, 100 meter combination. The Association of Federal Communications Consulting Engineers ("AFCCE") states that the proposed maximum power and reference antenna height above average terrain appear to be appropriate to accomplish the objectives of upgrading Class A facilities.¹⁸ Nutmeg comments that no maximum effective radiated power less than 6000 watts would provide satisfactory relief for Class A stations. However, New Jersey, emphasizing its position in favor of a blanket power increase, indicated that it would prefer an across-the-board power increase even if of a lesser magnitude, rather than a selective power increase of 6000 watts.¹⁹

17. *Methods of Implementation.* We outlined in the *Notice* two possible methods (which we termed "METHOD 1" and "METHOD 2") for implementing the Class A power increase, and requested further public comment addressing the advantages and drawbacks of each method.²⁰ Under METHOD 1, we would raise the maximum ERP limit for all Class A FM stations from 3000 to 6000 watts, while retaining the existing minimum co-channel and adjacent channel spacings applicable to Class A stations.²¹ Grandfathered short-spaced stations²² would be allowed to increase ERP up to 6000 watts, subject to the provisions of Section 73.213 of the rules. Referring to an initial staff study²³, we noted that employing METHOD 1 would apparently have little effect on other existing stations, and would result in a net service area gain. But we stated that further study of the technical implications of METHOD 1 would be undertaken during the pendency of this proceeding.²⁴

18. METHOD 2 would permit the increase in power for only those Class A stations able to meet appropriate new separation distances.²⁵ Service gains would not be as great as with METHOD 1, but adverse effects on existing stations would be minimized. We stated that METHOD 2 would essentially create two categories of Class A FM stations - those allowed to increase power to 6000 watts, and those remaining limited to 3000 watts. Grandfathered short-spaced stations would fall into the latter category; however, some of these stations might be able to increase power if mutual agreements could be reached with all involved stations, and if it were shown that such an increase would serve the public interest.

19. If METHOD 2 were to be implemented, two sets of distance separation requirements could be established - one for the 3000 watt level and another for the 6000 watt level - or, alternatively a single set of distances based on the higher power level could be used. We requested comment on these possibilities and on the complexity involved with administering METHOD 2 generally.²⁶

20. In general, comments of most Class A FM broadcast station licensees favor a "blanket" power increase; that is, they request that the Commission allow *all* Class A stations to increase power without regard to the individual situations of the stations. Accordingly, between the two methods we proposed, most Class A licensees prefer METHOD 1, which is closer to the blanket upgrade approach. These licensees oppose a selective upgrade approach, such as METHOD 2, based on increased distance separation requirements. Some of the reasons cited by these commenters in support of the blanket upgrade are:

- 1) The blanket approach would allow all Class A stations to increase power, whereas the selective approach would exclude many Class A stations, particularly in the urban northeast, where the competitive imbalance is most severe.
- 2) The blanket approach would be relatively simple to administer, whereas the selective approach would involve additional paperwork and delay associated with a case-by-case implementation.
- 3) Under the blanket approach, all Class A stations would be on an equal footing, whereas under the selective approach, there would be two categories of Class A station, 3000 watt and 6000 watt.
- 4) Under the blanket approach, all Class A stations could increase power at their current locations, whereas under the selective approach, costly relocations could be necessary in order for some Class A stations to increase power.

21. New Jersey, for example, reports that 21.7% of all Class A stations are short-spaced under the current distance separation requirements, 46.3% would be short-spaced under the increased minimum distance separation requirements suggested by the National Association of Broadcasters ("NAB"), and 55.8% would be short-spaced under the increased minimum distance separation requirements set forth by the Association for Broadcast Engineering Standards ("ABES").²⁷ Under METHOD 2, power increases would not be allowed for short-spaced stations. Although under METHOD 1, power increases would be allowed for short-spaced stations, such increases would be subject to Section 73.213 of the rules, and thus would likely involve relocation of the station's transmitting antenna to a new site or the use of a directional antenna. New Jersey advises that such measures would be unaffordable or otherwise infeasible for most Class A stations.²⁸ Main Street Broadcasting Company, Inc. ("Main Street"), licensee of Class A station WLNG (Sag Harbor, New York), asserts that any method which excludes such a large percentage of existing Class A stations from increasing power would be "grossly inequitable."²⁹

22. Brattleboro states that it supports the blanket approach because implementation would be less burdensome to the Commission and broadcasters. Brattleboro fears that a selective approach would require a case-by-case study of all Class A stations that could swamp the Commission, and cause Class A stations to incur large expenditures for engineering studies, legal counsel, and FCC filing fees. Furthermore, Brattleboro argues that any method other than a blanket increase would result in undue delays, even for upgrades that present no problems.³⁰

23. New Jersey also fears that any implementation method other than an unconditional blanket increase would entail "the creation of two groups of Class A stations -- the haves and the have-nots; those with 6000 watts and those with 3000; those with significantly improved coverage and those with their existing, increasingly inadequate coverage."³¹ Drexel agrees, stating its belief that Class A stations remaining at the 3000 watt level would become "a new underclass of third class citizens, who will be worse off than before."³² Greater Media, however, replies that New Jersey's "haves and have-nots" assertion is "ridiculous." By such logic, Greater Media argues, Class B and C stations should be considered "haves" and Class B1, C1, C2, and C3 stations should be considered "have-nots." The availability for allotment of various classes of FM stations depending on geographical locations and service objectives constitute a carefully crafted plan providing effective and efficient spectrum allocation tools, according to Greater Media.³³

24. Vacationland Broadcasting Services ("Vacationland"), licensee of Class A station WHYR (Saco, Maine), details the complications it will face to increase power if a blanket increase method is not adopted. Vacationland states that it would need to relocate its transmitting tower to overcome a 5.6 km short-spacing under the ABES suggested requirements (2.6 km under the NAB suggested requirements). Vacationland points out that its existing tower will remain in place because other radio services also use it and that the new tower will thus become an additional potential aviation obstruction and environmental hazard. Vacationland further alleges that the resources it would spend to purchase land and equipment for the relocation might otherwise be spent improving community service.³⁴

25. Universal Broadcasting Corporation ("Universal"), licensee of four Class A FM stations, states that the Commission's proposal to increase power of Class A FM stations to 6,000 watts is consistent with previously stated public interest goals of improving the quality of existing broadcast service to the public, and that METHOD 1 provides the greatest possible realization of those goals with little, if any, increased interference to existing facilities. Therefore, Universal urges the Commission to provide for an across-the-board increase in the maximum power of Class A FM stations.³⁵

26. On the other hand, comments filed by many broadcast organizations, consulting engineering firms, and most licensees of Class B FM stations strongly oppose any form of blanket power increase for Class A stations. These commenters state that they favor increased power for Class A stations, but only where no interference would result, and therefore they believe that any Class A power increase must be administered on a selective basis. These commenters therefore favor METHOD 2. The principal reasons given by these commenters for their opposition to a blanket Class A power increase are:

- 1) A blanket power increase for Class A stations would cause unacceptable interference to the current service of Class B and B1 stations, whereas a selective power increase would protect this service.
- 2) A blanket power increase would cause overall degradation of the FM service.

3) A blanket power increase would destroy the technical integrity of the minimum distance separation requirements.

27. For example, ABES states that an across-the-board increase in maximum Class A power cannot be accomplished without what ABES considers to be an unacceptable level of interference to existing FM service.³⁶ Greater Media agrees, commenting that METHOD 1 would cause "massive new interference throughout the FM band, affecting most classes of FM stations, including in particular Class B facilities." Greater Media adds:

"Method One is also grossly unfair to existing licensees which have served the public interest for years. It unilaterally expropriates portions of their currently protected service areas for the benefit of Class A licensees, which have operated their facilities with full knowledge of their advantages and disadvantages."³⁷

28. Many of the commenters, in gauging the effect of a blanket Class A power increase, make differing assumptions as to the area within which Class B FM stations are entitled to protection from interference from other FM stations. Greater Media's assessment of the extent of loss of protected service is based upon its use of the 0.5 mV/m field strength contour as the boundary for Class B protected service.³⁸ Greater Media claims that the Commission, in Docket 14185 which produced the fundamental rules that govern the FM service today, "wisely opted for protection of the Class B signal to the 0.5 mV/m (54 dBu) contour" while adopting a 1 mV/m (60 dBu) protected field strength contour for Class A and Class C stations.³⁹ However, Massachusetts, in reply, contradicts this claim, stating that "there is no historical or scientific evidence that the Commission formulated the spacing rules with an intent to protect Class B stations to any particular contour." As an example, Massachusetts states that the original spacings protected Class B service from second adjacent channel interference only within the 1.35 mV/m (62.5 dBu) contour.⁴⁰

29. Vacationland asserts that "the real issue is whether Class B stations should be protected" to their 0.5 mV/m field strength contour, or to their 1 mV/m contour, "as [are] all other stations."⁴¹ Massachusetts argues that "even if a 54 dBu protected contour did have historical credibility it would still have to pass the public interest test" now, "and it could not."⁴² Likewise, New Jersey, noting that for the past quarter century Class B stations have not enjoyed this level of protection from adjacent channel signals, asserts that "the public interest is not served by protecting distant 54 dBu coverage from Class Bs at the expense of stronger, more reliable signals from local Class As."⁴³ New Jersey suggests that Class B stations should be provided protection to the same field strength contour as for Class A and C stations.⁴⁴ Greater Media replies:

"Contrary to [New Jersey's] claim, Class B stations are now and have always been entitled to protection to the 54 dBu contour. This principle . . . should not be overturned here simply to provide one group of licensees a marginal benefit at the expense of another group. Thus, [New Jersey's] use of a 58 dBu or 60 dBu contour for Class B stations in an at-

tempt to show lack of impact is a rewriting of current FM allocation standards which may not be relied upon by the Commission in judging the effect of blanket increases for Class A stations on existing Class B FM facilities."⁴⁵

30. ABES notes that the Commission's proposal does not consider the possible loss of generally useful service outside the protected contour.⁴⁶ Concern about potential interference to non-protected service is also expressed by CBS, Inc. ("CBS"), which notes that various adjacent channel Class A stations are located within the 50 uV/m contours of its Class B FM stations KNX-FM (Los Angeles) and KRQR (San Francisco).⁴⁷

31. NAB comments that carefully established technical standards and related mileage separations are needed to ensure that only limited additional interference will occur to existing service, including the existing service of Class A broadcasters themselves.⁴⁸ Increasing power without regard to technical standards (as with an universal blanket power increase) sets a poor public interest precedent, says NAB. NAB further explains that "the existence of technical standards serves the public's interest by assuring the public of interference-free reception. If the Commission were to disregard the standards it has itself established, one must question the basis for having any technical standards at all."⁴⁹ Main Street, however, describes this argument as a "red herring." Main Street finds absurd the suggestion that METHOD 1 would "somehow undermine the integrity of the FCC's entire technical scheme."⁵⁰

32. Stoner Broadcasting System, Inc. ("Stoner") asserts that logical errors in the arguments made by those advocating adoption of METHOD 1 are symptomatic of the broader policy problems which flaw the proposal. According to Stoner, METHOD 1 represents the same sort of incremental degradation that (Stoner claims) has played a major part in the decline of AM service. Stoner believes that the Commission would be ill-advised to send the now vibrant and healthy FM service on the same course by chipping away at the quality of FM service. Instead, Stoner suggests that the Commission should allow upgrades of Class A stations only where doing so would not cause interference to existing service. Stoner believes that the selective approach of METHOD 2 would permit an improvement in service for a substantial number of Class A FM stations without degrading the quality of the service of other FM stations, thus protecting the integrity and quality of FM service as a whole.⁵¹

33. Kiss Limited Partnership ("KLP"), a licensee of six Class B FM stations, stated that it is not opposed to an increase in Class A power provided that FM service areas are protected from adjacent and co-channel interference. KLP is, however, opposed to METHOD 1 because it believes that under this method existing stations would be subject to increased adjacent and co-channel interference. KLP asserts that the Commission has failed to show that the loss of established service and the disruption of listening habits, if METHOD 1 were adopted, is outweighed by any substantial increased public benefits. KLP further submits that the Commission has not provided any empirical evidence that Class B and C stations do not serve local audience needs at least as well as Class A stations in the same community.⁵²

34. The engineering firm of du Treil, Lundin & Rackley ("dLR") favors METHOD 2 and suggests (as does NAB) that it would not be necessary to create two types

of Class A station. Stations unable to meet the "test" of increased distance separation requirements could be "grandfathered," and even these stations might be allowed to increase power pursuant to "site relocation, the employment of directional antenna, agreement between parties, or other acceptable means." dLR adds that a public interest showing should not be required for the approval of an agreement between a 6000 watt Class A station and a short-spaced Class B station, because "the projected area of interference is likely to be small and well served by other stations."⁵³

35. *Administrative procedures.* We stated in the Notice that regardless of which method for implementing a Class A power increase were to be selected, we would prefer to minimize the administrative burdens on licensees and our staff. While noting that we generally proceed upon individual applications in upgrading FM facilities, we expressed concern that employment of a strictly case-by-case approach would result in excessive processing delays, even for problem-free applications. Nevertheless, we requested comments on the procedural aspects and implications of a case-by-case approach.⁵⁴

36. We proposed, however, to employ procedures combining elements of both the blanket approach and the case-by-case approach. Specifically, we proposed to allow (with certain exceptions⁵⁵) Class A stations that can effect the power increase by simply adjusting transmitter output power, replacing an omnidirectional antenna with a higher gain omnidirectional antenna, replacing the transmission line or components within the transmission line, or by a combination of these methods, to do so without individual prior approval. In such cases, the station licensee would be required only to file FCC Form 302, together with a supplemental exhibit addressing environmental and coordination matters, within ten days after the power increase is made.⁵⁶ In all other cases, the Class A station licensee would be required to file FCC Form 301 and obtain prior approval for the power increase.⁵⁷ We invited suggestions for any additional rule changes that might be needed to administer the proposed power increase.⁵⁸

37. ABES opposes this procedure because it believes the Commission must have the opportunity to pass on the "propriety and manner in which a station proposes to increase power." ABES believes that the Commission should determine, prior to allowing Class A stations to increase power, whether minimum spacing requirements are met.⁵⁹ ABES argues that if an ineligible station were to increase power, it would be necessary for the Commission to catch the error when processing the station's application for modification of license, notify the station of the error, and then require the station to reduce power. In view of expenses stations may incur to increase power, ABES concludes that potential financial hardships on stations would be avoided by requiring Class A stations to file Form 301 and obtain Commission approval prior to any power increase. ABES believes the processing burden on the Commission's staff would be minimal because compliance with minimum distance separation requirements can be readily determined using computer programs. ABES therefore urges the Commission to require Class A FM stations wishing to increase power to file FCC Form 301 prior to implementing the change.⁶⁰

38. *Effect on public radio service.* If bilateral increased separation requirements (such as contemplated for METHOD 2) were employed in connection with the Class

A power increase, these increased requirements might adversely affect future expansion possibilities for public radio stations operating on the top three channels of the reserved band.⁶¹ We requested comments as to whether and how our existing policy in regard to public radio service should be modified to prevent such adverse affects.⁶²

39. National Public Radio and the Corporation for Public Broadcasting ("NPR&CPB"), in joint comments, state that neither of the two proposed methods for implementing the Class A power increase takes into account special burdens that the power increase might create for upper reserved-band non-commercial educational FM (NCE-FM) stations. NPR&CPB state that although current Commission policy provides some accommodation for upper band NCE-FM stations in the vicinity of a Channel 6 TV station, such policy does not ensure that public broadcasters can retain full use of their existing spectrum if Class A station power is raised. NPR&CPB further believe that public radio stations in locations which do not have a Channel 6 TV station will also experience some restriction on future expansion.⁶³

40. NPR&CPB submit that the current "heavy burden" policy with regard to NCE-FM stations in a TV Channel 6 market would be completely overcome by the proposed METHOD 1.⁶⁴ In addition, they assert that METHOD 2 also fails to take into account the Commission's stated policy on maintaining reserved spectrum for public broadcasting, because it does not propose any special showing for Class A stations seeking a power increase in areas where a Channel 6 TV station operates. Concerning the proposed administrative provisions that would allow licensees of certain Class A stations to implement the power increase without individual prior approval, NPR&CPB suggest that, at a minimum, the Commission should require such licensees to notify affected NCE-FM stations prior to increasing power, and in markets where a Channel 6 TV station is assigned, make a showing to rebut the presumption that a Class A power increase on Channels 221, 222 and 223 would have an adverse affect on public radio service in the area.⁶⁵ NPR&CPB conclude that the Commission should not adopt an implementation method that favors administrative ease over statutory responsibilities to assess the public interest. NPR&CPB therefore urge the Commission to reject outright the proposal for Class A power increases in light of the significant burdens that could be imposed on noncommercial educational broadcasters.⁶⁶

41. *IF distance separation requirements.* Finally, we invited comments on how to handle any existing IF-related Class A stations that do not meet the increased (from 8 to 10 kilometers) IF spacing requirement that would be needed to maintain a 36 mV/m protection level.⁶⁷

42. Relatively few comments addressed the IF issue. Most of those that did, such as AFCCE, support distance separation requirements designed to prevent, on the average, overlap of the field strength contours which were (at that time) to be determined in MM Docket No. 86-144. For IF-related Class A stations that are currently short-spaced or would become short-spaced as a result of an increase in the IF distance separation requirements, AFCCE urges that power increases for these stations be considered on a case-by-case basis. To avoid prohibited contour overlap, AFCCE suggests that such stations be allowed to employ any reasonable technical means, such

as reduced effective antenna height and/or ERP in pertinent directions, including the use of directional antennas.⁶⁸

DISCUSSION

43. *Class A power limit raised to 6000 watts.* During the pendency of this rule making proceeding, we have received several hundred letters from licensees, general managers, and engineers of Class A FM stations in every region of the country. If one fact is abundantly clear from this outpouring, it is that a substantial number of the persons most familiar with the day to day operation of Class A stations firmly believe that the current 3000 watt power level is inadequate for these stations to be technically and economically competitive in the current radio marketplace environment, and that the proposed increase to 6000 watts would make a significant improvement in the ability of these stations to serve the public. For the most part, even the commenting parties that oppose the blanket power increase plan do not question the need of Class A stations for the additional power. In fact, most of these parties state that they support the improvement of Class A facilities, provided that interference is not caused to existing service.

44. We find that the record as a whole supports the proposed increase in the maximum transmitting power for Class A stations. Therefore, we are amending Section 73.211 of our rules to raise the maximum effective radiated power limit for Class A FM broadcast stations from 3000 to 6000 watts, as we proposed. We are retaining the current reference antenna HAAT of 100 meters for Class A stations other than those located in Puerto Rico and the Virgin Islands.⁶⁹ Fewer Class A stations would be able to increase facilities if a higher reference antenna HAAT (and correspondingly lower ERP) were adopted, because of the increased costs and necessity to obtain zoning and/or FAA approval for taller antenna structures. No commenters presented arguments that any other ERP-HAAT combination would be more appropriate. Furthermore, equivalent combinations of lower ERP and higher antenna HAAT, such as 4000 watts with 125 meters, will be permitted under the new limit.⁷⁰ We do not believe that any useful purpose would be served by our adopting a lesser increase in the power limit, e.g. 5000 watts, because if we did so, the benefits of the power increase would be reduced, yet none of the difficulties of its implementation would be resolved.

45. *Increased minimum power requirement for Class B1 and C3.* The minimum power requirement for each FM station class (in Section 73.211 of the rules) corresponds to the maximum power limit for the next lower station class.⁷¹ This helps to avoid ambiguity in station classification. Because we are raising the maximum power limit for Class A, we are also raising the minimum power requirement for Class B1 and C3 stations accordingly. Currently Class B1 and C3 stations must operate with an ERP greater than 3000 watts. We are revising Section 73.211 to require that Class B1 and C3 stations must operate with an ERP greater than 6000 watts.⁷² In the non-reserved (commercial) portion of the FM band, all but two of the 53 outstanding Class B1 authorizations already meet the new minimum requirement.⁷³ In the educational portion of the band, 79 of the 105 stations currently classified as Class B1 would continue to be properly classified under the new rules. There are no

Class C3 stations yet, as this station class was established only a short time ago in the *First Report*. We did not propose the reclassification of existing Class B1 authorizations in the *Notice*, therefore, we are not establishing reclassification procedures for them at this time.

46. *Selective implementation method chosen.* After careful review of the record, in particular the engineering statements and other comments that support or oppose, on technical grounds, each of the proposed methods, we conclude that the Class A power increase should be implemented on a selective basis, rather than as a blanket increase. We further conclude that the minimum distance separation requirements applicable to Class A stations should be adjusted to account for the increase in transmitting power. The rules that we are adopting are thus similar to our proposed METHOD 2, however, they also incorporate some aspects of our proposed METHOD 1. For example, the new rules provide for increased power operation by existing grandfathered short-spaced stations, subject to Section 73.213 of our rules.⁷⁴ In addition, we are adopting rules that will allow the licensees of fully-spaced Class A stations that can effect the power increase by simple technical means to do so prior to filing an application. These measures are explained further below.

47. The service areas of FM stations in the non-reserved band are considered to be circles of a given radius.⁷⁵ The minimum distance separation requirements are intended to protect, on average, service⁷⁶ within these circular areas, assuming that all stations broadcast using maximum permitted ERP and an antenna HAAT equal to the reference HAAT for their station class. However, in any individual situation, due to terrain variations and other factors, this protection might not be realized. Furthermore, certain of the required minimum distances are not calculated precisely using current propagation techniques, and are thus less accurate than is desirable. As a consequence of these "anomalies," full protection may not be realized. Nevertheless, our rules state clearly that each individual station is entitled only to such protection to its service as may result when assignments are made in accordance with the rules.

48. *Effect of a blanket increase on existing service.* In the *Notice*, we considered METHOD 1 because our initial analysis indicated that the adverse effect of a Class A power increase on existing stations would be relatively small compared to the increased service to the public. As noted above, many of the commenters take issue with this assessment, variously describing a blanket Class A power increase as an action that would cause "massive interference"⁷⁷ and ruin the "technical integrity" of the FM service⁷⁸, and would eventually visit upon FM many of the ills suffered by the AM broadcast service.⁷⁹

49. A blanket power increase might result in some interference to the service of the larger class stations. The Commission originally established that Class B stations should have a protected service radius of 40 miles. Because we believe that, in view of the size of urban and suburban areas served today, this expected service radius should not be reduced⁸⁰, and because we wish to act very cautiously in taking action that might shift equities substantially, we conclude that the public interest would not be served by imposing an involuntary coverage reduction on Class B stations. Moreover, we note that Class A facilities were acquired with a 3 kW limitation. While a selective increase in power is consistent with the public interest, it should not be accomplished at the expense of

reducing coverage or interfering with other existing facilities. Consequently, we shall employ a selective method to allow existing Class A stations to increase power.

50. *New minimum distance separation requirements for Class A stations.* The purpose of our minimum distance separation requirements for FM stations is to allow FM assignments to be made without excessive delay on an administratively convenient "go - no go" basis.⁸¹ As previously explained, FM stations are entitled only to such coverage protection as the separation requirements provide. Consequently, if the maximum power limit for Class A stations is to be raised and involuntary loss of currently protected service area is to be prevented, it follows that the distance separation requirements applicable to Class A stations must be increased. We are adopting new requirements that will maintain present protection.

51. *Grandfathered short - spaced stations.* We have decided, as suggested by dLR and NAB, to grandfather all existing stations that do not meet the new distance separation requirements.⁸² A new category of grandfathered short-spaced stations under Section 73.213 of our rules, comprising these stations, will be created. For stations in this new category, we will allow (1) Class A stations broadcasting with no more than the current maximum facilities (3000 watts ERP and an antenna HAAT of 100 meters, or equivalent lower ERP and higher HAAT) and newly short-spaced stations of all other classes, and (2) Class A stations operating with more than 3000 watts ERP, but with no greater interference potential than a station operating at the current maximum facilities⁸³ to be modified or relocated provided that the current minimum distance separation requirements are met.⁸⁴ The first provision preserves the freedom to modify or relocate, under the terms of the current rules, the newly-grandfathered Class A stations that do not increase power above the current limit and the stations of other classes that become short-spaced to Class A stations as a result of our revision of Section 73.207 of the rules in this order. The second provision allows licensees of newly-grandfathered Class A stations using an antenna HAAT less than 100 meters the option to increase power above 3000 watts.⁸⁵ Although a power increase under these circumstances will not expand service area beyond that of a 3000 watt, 100 meter Class A station, it may still prove to be of some value in overcoming the building penetration and temperature inversion interference problems frequently cited by commenters. Stations that were already grandfathered short-spaced stations before this action can still be modified or relocated subject to the existing provisions of Section 73.213.⁸⁶

52. We recognize that there may be situations where the newly created short-spaced Class A facilities may be able to increase power without reducing another station's coverage. In this regard, we wish to extend authority to increase power where possible, so long as it does not interfere with other stations. Therefore, we will consider applications by newly created short-spaced Class A stations, on a case-by-case basis, in the following limited circumstances. In the case of Class A stations which are newly short-spaced to each other and which seek mutual increases in facilities we will allow such increases in power to the class limit provided that all the Class A stations seeking the increase first obtain the consent of any other stations who may be affected by the change, and that the increase is otherwise consistent with the public interest. Unilateral increases will be permitted if a station has obtained the consent of all other stations which may

be affected, and the increase is consistent with the public interest. We note that agreement among stations which may be affected is a necessary but not sufficient condition to granting a power increase. As between Class A and other facilities, the Commission will examine each request to insure that no fully spaced or less short spaced site is available.

53. *IF distance separation requirements.* Because IF interference may potentially affect all of the FM stations in an area, in addition to the two IF-related stations, we will not allow agreements for short-spaced IF related stations. To increase power beyond the current 3000 watt, 100 meter maximum facilities, a Class A station's antenna site must meet the modified IF distance separation requirements of Section 73.207.

54. *Public radio service.* We believe that any adverse effect of the Class A power increase on public radio service operating in the upper portion of the reserved spectrum will be minimal under the rules we are adopting. Our findings are based on the following reasons. First, we note that for second and third adjacent channel stations the distance separation requirements are increased only for the Class A to Class A and Class A to Class C1 relations.⁸⁷ The other second and third adjacent requirements are unchanged. The IF distance separation requirements are increased slightly (by 1 to 2 km typically), but some of these requirements were recently reduced in MM Docket No. 86-144, and the two changes offset each other to some extent. Moreover, there are very few IF-related station pairs anyway. Consequently, the only significant increases affecting the upper portion of the reserved band⁸⁸ are in the first adjacent minimum distance separation requirements.

55. Second, for those stations that are affected, the commercial Class A station is limited to the current 3000 watt, 100 meter maximum facilities or other facilities with no greater interference potential, unless consent is obtained from all affected stations, *including the NCE - FM station (s)*. We conclude therefore, that the action we take herein will not have significant adverse impact upon public radio service, and that no special restrictions or requirements in connection with the power increase for Class A stations operating on Channels 221, 222 and 223 are necessary.

56. *Administrative procedures.* Because of our desire to allow as many Class A stations as possible to upgrade without unnecessary delay and expense, we are adopting administrative procedures similar to those proposed in the *Notice*. Specifically, in November of this year, we will publish a list of licensed Class A stations at sites that appear to meet all of the appropriate minimum distance separation requirements in our rules.⁸⁹ Of the stations on this list⁹⁰, those for which the power increase can be implemented by replacing a non-directional antenna with a higher gain non-directional antenna, changing the transmitter output power⁹¹, changing the type or length of the transmission line, and/or installing or removing certain components in the transmission line, may begin operation with increased ERP on or after December 1, 1989, but prior to the filing of an application for such operation. In such cases, licensees will be required to file FCC Form 302, together with the supplemental exhibit⁹² addressing environmental matters (see Appendix B), within 10 days after the power increase is made.⁹³ This automatic authority does not extend to stations for which an increase in facilities would expose workers or the general public to

levels of rf radiation in excess of the "Radio Frequency Protection Guides" recommended in "American National Standard Safety Levels with respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz," (ANSI C95.1-1982) by the Institute of Electrical and Electronics Engineers, Inc., 345 East 47th Street, New York, New York 10017. Such stations may not operate with increased facilities until measures are taken to prevent workers and the general public from being exposed to the excess levels of rf radiation or unless they first receive authorization from the FCC.

57. In all other respects, the rules we are adopting will become effective on October 2, 1989. Applications and petitions filed prior to October 2, 1989 must comply with, and will be processed in accordance with, the current rules. Applications on FCC Form 301 to increase Class A station power pursuant to the rules we are adopting herein (for stations that will be newly grandfathered, or for some other reason will be unable to utilize the FCC Form 302 procedure described above) may be filed on or after October 2, 1989. Because some Class A stations not meeting the new distance separation requirements may nevertheless be able to increase power by utilizing the contour protection provisions of Section 73.215 of our rules, we are exempting such stations from the temporary 5 mile (8 kilometer) limit on short-spaced locations under this rule.

CONCLUSION

58. Whenever we consider major technical proposals that affect the facilities of an entire class of broadcast stations, or the administrative systems governing the allotment and assignment of such, we note that it is virtually impossible to arrive at a solution that will fully satisfy all of those affected. We anticipate that this action granting a general increase in the power of Class A FM broadcast stations will be no exception. No other technical proposal since BC Docket 80-90 has generated so great a controversy or so large a response. We appreciate the many well prepared and informative comments supplied by individual broadcast station licensees, industry organizations, and other concerned parties. In reaching our decisions in this proceeding, we have attempted to fairly weigh the concerns expressed in the contrasting positions and to fashion flexible rules that will provide optimum benefit to the public by encouraging improved FM broadcast service, while maintaining the quality and extent of existing FM service.

59. Finally, we note that we are now approaching the end of a fiscal year in which, as a result of the continuing budgetary need for restraint in federal expenditures, the Commission's resources have been severely strained. We anticipate that our decision in this matter will have a significant administrative impact that could cause a considerable increase in the processing time for FM applications. Nevertheless, we do not believe that we should forgo a good policy decision in this rule making simply because of the administrative costs. Thus, we have set the effective date of this order at the beginning of our next fiscal year. We will endeavor to maintain satisfactory service consistent with the level of resources available in the coming year.

FINAL REGULATORY FLEXIBILITY ANALYSIS

60. Pursuant to the Regulatory Flexibility Act of 1980, the Commission's final analysis is as follows:

I. Need and Purpose of this Action:

The Commission is increasing the maximum permitted power for Class A FM broadcast stations. The principal purpose of this action is to provide additional opportunities for improvement of the facilities of existing Class A FM broadcast stations. The need for such improvement was outlined in the *Notice* and confirmed by the majority of the commenting parties. Existing Class A stations will be allowed to increase to the new power limit on a selective basis.

II. Summary of Issues Raised by the Public Comments in Response to the Initial Regulatory Flexibility Analysis:

No commenters addressed the Initial Regulatory Flexibility Analysis.

III. Significant Alternatives Considered and Rejected:

The Commission considered the alternative of allowing existing Class A stations, other than grandfathered short-spaced stations, to increase power on an across-the-board basis, rather than a selective basis. However, the Commission determined that to do so could reduce the expected coverage areas of certain other classes of FM broadcast stations, and that to impose such a reduction would not be in the public interest.

61. The Secretary shall send a copy of this *First Report and Order*, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with paragraph 603(a) of the Regulatory Flexibility Act (Pub. L. No. 96-354, 94 Stat. 1164, 5 U.S.C. Section 601 *et seq.*, (1981)).

PAPERWORK REDUCTION

62. The action contained herein has been analyzed with respect to the Paperwork Reduction Act of 1980 and has been found to impose a modified information collection requirement on the public. Implementation of any modified requirement will be subject to approval by the Office of Management and Budget as prescribed by the Act.

ORDERING CLAUSE

63. IT IS ORDERED, pursuant to authority contained in Sections 4 and 303 of the Communications Act of 1934, as amended, 47 U.S.C. 154 and 303, and effective **October 2, 1989**, That Part 73 of the Commission's Rules is AMENDED as set forth in Appendix A below A, and That authority to order Class A station licensees found to have improperly increased power to return to licensed parameters IS DELEGATED to the Chief, Mass Media Bureau.

FEDERAL COMMUNICATIONS COMMISSION

Donna R. Searcy
Secretary

APPENDIX A

47 CFR Part 73 is amended as follows:

1. The authority citation for Part 73 continues to read as follows:

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

2. 47 CFR 73.207 is amended by revising the numbers in the first seven rows of TABLE A in paragraph (b)(1), by revising the introductory texts of paragraphs (b)(2) and (b)(3), and by revising the numbers in the first row of the table in paragraph (c), to read as follows:

§ 73.207 Minimum distance separation between stations.

* * * * *

(b) * * *

(1) Domestic allotments and assignments must be separated from each other by not less than the distances in Table A which follows:

TABLE A - MINIMUM DISTANCE SEPARATION REQUIREMENTS IN KILOMETERS (MILES)

Relation	Co - channel	200 kHz	400/600 kHz	10.6/10.8 MHz
A to A	115 (71)	72 (45)	31 (19)	10 (6)
A to B1	143 (89)	96 (60)	48 (30)	12 (7)
A to B	178 (111)	113 (70)	69 (43)	15 (9)
A to C3	142 (88)	89 (55)	42 (26)	12 (7)
A to C2	166 (103)	106 (66)	55 (34)	15 (9)
A to C1	200 (124)	133 (83)	75 (47)	22 (14)
A to C	226 (140)	165 (103)	95 (59)	29 (18)

* * * * *

(2) Under the Canada - United States FM Broadcasting Agreement, domestic U.S. allotments and assignments within 320 kilometers (199 miles) of the common border must be separated from Canadian allotments and assignments by not less than the distances given in Table B, which follows. When applying Table B, U.S. Class C2 allotments and assignments are considered to be Class B; also, U.S. Class C3 allotments and assignments and U.S. Class A assignments operating with more than 3 kW ERP and 100 meters antenna HAAT (or equivalent lower ERP and higher antenna HAAT based on a class contour distance of 24 km) are considered to be Class B1.

(3) Under the Mexico - United States FM Broadcasting Agreement, domestic U.S. allotments and assignments within 320 kilometers (199 miles) of the common border must be separated from Mexican allotments and assignments by not less than the distances given in Table C, which follows. When applying Table C, U.S. Class C2, C3 and B1 allotments and assignments are considered to be Class B; U.S. Class C1 allotments and assignments are considered to be Class C; also, U.S. Class A assignments operating with more than 3 kW ERP and 100 meters antenna HAAT average terrain (or equivalent lower ERP and higher antenna HAAT based on a class contour distance of 24 km) are considered to be Class B.

(c) The distances listed below apply only to allotments and assignments on Channel 253 (98.5 MHz). The Commission will not accept petitions to amend the Table of Allotments, applications for new stations, or applications to change the channel or location of existing assignments where the following minimum distances (between transmitter sites, in kilometers) from any TV Channel 6 allotment or assignment are not met:

MINIMUM DISTANCE SEPARATION FROM TV CHANNEL 6 (82-88 MHz)

FM Class	TV Zone I	TV Zones II & III
A	17	22

3. 47 CFR 73.210 is amended by revising paragraphs (b)(1), (b)(2)(i) and (b)(3)(i) to read as follows:

§ 73.210 Station classes.

(b) * * *

(1) Determine the reference distance of the station using the procedure in paragraph (b)(1)(i) of §73.211. If this distance is less than or equal to 28 km, the station is Class A; otherwise,

(2) * * *

(i) If this distance is greater than 28 km and less than or equal to 39 km, the station is Class B1.

(3) * * *

(i) If this distance is greater than 28 km and less than or equal to 39 km, the station is Class C3.

4. 47 CFR 73.211 is amended by revising paragraphs (a)(1)(ii) and (a)(1)(iv), by revising the numbers in the first row of the table in the introductory text of paragraph (b)(1), by revising paragraph (b)(1)(ii), and by revising the first row in the table in paragraph (b)(3) to read as follows:

§ 73.211 Power and antenna height requirements.

(a) * * *

(ii) The ERP for Class B1 stations must exceed 6 kW.

(iv) The ERP for Class C3 stations must exceed 6 kW.

(b) Maximum limits.

(1) Except for stations located in Puerto Rico or the Virgin Islands, the maximum ERP in any direction, reference HAAT, and distance to the class contour for each FM station class are listed below:

Station Class	Maximum ERP	Reference HAAT in meters (ft)	Class contour distance in kilometers
A	6kW (7.8 dBk)	100 (328)	28

(ii) If a station's ERP is equal to the maximum for its class, its antenna HAAT must not exceed the reference HAAT, regardless of the reference distance. For example, a Class A station operating with 6 kW ERP may have an antenna HAAT of 100 meters, but not 101 meters, even though the reference distance is 28 km in both cases.

(3) For stations located in Puerto Rico or the Virgin Islands, the maximum ERP in any direction, reference HAAT, and distance to the class contour for each FM station class are listed below:

Station Class	Maximum ERP	Reference HAAT in meters (ft)	Class contour distance in kilometers
A	6kW (7.8 dBk)	240 (787)	42

5. 47 CFR 73.213 is amended by adding a new paragraph (c) to read as follows:

§ 73.213 Grandfathered short-spaced stations.

(c) Stations at locations authorized by grant of applications filed prior to October 2, 1989 that became short-spaced as a result of the revision of §73.207 in the *Second Report and Order* in MM Docket No. 88-375 (_____ FR _____, _____, 1989) may be modified or relocated in accordance with paragraph (c)(1) or (c)(2) of this section. New stations on channel allotments made by order granting petitions to amend the Table of FM Allotments which were filed prior to October 2, 1989, may be authorized in accordance with paragraph (c)(1) or (c)(2) of this section. No other stations will be authorized pursuant to these paragraphs.

(1) *Applications for authorization under requirements equivalent to those of prior rules.* Each application for authority to operate a Class A station with no more than 3000 watts ERP and 100 meters antenna HAAT (or equivalent lower ERP and higher antenna HAAT based on a class contour distance of 24 km) must specify a transmitter site that meets the minimum distance separation requirements in this paragraph. Each application for authority to operate a Class A station with more than 3000 watts ERP (up to a maximum of 5800 watts), but with an antenna HAAT lower than 100 meters such that the distance to the predicted 0.05 mV/m (34 dBuV/m) F(50,10) field strength contour does not exceed 98 km must specify a transmitter site that meets the minimum distance separation requirements in this paragraph. Each application for authority to operate an FM station of any class other than Class A must specify a transmitter site that meets the minimum distance separation requirements in this paragraph with respect to Class A stations operating pursuant to this paragraph or paragraph (c)(2) of this section, and that meets the minimum distance separation requirements of §73.207 with respect to all other stations.

**MINIMUM DISTANCE SEPARATION REQUIREMENTS
IN KILOMETERS (MILES)**

Relation	Co - channel	200 kHz	400/600 kHz	10.6/10.8 MHz
A to A	105 (65)	64 (40)	27 (17)	8 (5)
A to B1	138 (86)	88 (55)	48 (30)	11 (6)
A to B	163 (101)	105 (65)	69 (43)	14 (9)
A to C3	138 (86)	84 (52)	42 (26)	11 (6)
A to C2	163 (101)	105 (65)	55 (34)	14 (9)
A to C1	196 (122)	129 (80)	74 (46)	21 (13)
A to C	222 (138)	161 (100)	94 (58)	28 (17)

(2) *Applications for authorization of Class A facilities greater than 3000 watts ERP and 100 meters HAAT.* Each application to operate a Class A station with an ERP and HAAT such that the reference distance would exceed 24 kilometers must contain an exhibit demonstrating the consent of the licensee of each co-channel, first, second or third adjacent channel station (for which the requirements of §73.207 are not met) to a grant of that application. Each such application must specify a transmitter site that meets the applicable IF-related channel distance separation requirements of §73.207. Applications that specify a transmitter site which is short-spaced to an FM station other than another Class A station which is seeking a mutual increase in facilities may be granted only if no

alternative fully-spaced site or less short-spaced site is available. Licensees of Class A stations seeking mutual increases in facilities need not show that a fully spaced site or less short spaced site is available. Applications submitted pursuant to the provisions of this paragraph may be granted only if such action is consistent with the public interest.

6. 47 CFR 73.215 is amended by removing the NOTE that follows paragraph (b)(2)(ii).

7. 47 CFR 73.610 is amended by revising the first row of numbers in the table in paragraph (f) to read as follows:

§ 73.610 Minimum distance separations between stations.

(f) The distances listed below apply only to allotments and assignments on Channel 6 (82-88 MHz). The Commission will not accept petitions to amend the Table of Allotments, applications for new stations, or applications to change the channel or location of existing assignments where the following minimum distances (between transmitter sites, in kilometers) from any FM Channel 253 allotment or assignment are not met:

**MINIMUM DISTANCE SEPARATION FROM
FM CHANNEL 253 (98.5 MHz)**

FM Class	TV Zone I	TV Zones II & III
A	17	22

8. 47 CFR 73.1690 is amended by revising paragraph (b)(2) and adding a new paragraph (c)(4) and a NOTE following that new paragraph, to read as follows:

§ 73.1690 Modification of transmission systems.

(b) * * *

(2) Change in the operating power from that specified on the station authorization, except as provided in paragraph (c)(4) of this section.

(c) * * *

(4) On or after December 1, 1989, increase in the effective radiated power of eligible Class A FM stations pursuant to MM Docket 88-375, when such increase is effected by:

(i) replacement of a non-directional antenna with another non-directional antenna having higher gain, provided that the height above ground of the center of radiation is within 2 meters of that specified in the station authorization; and/or

(ii) increase in the power input to the antenna, as a result of adjustment of the transmitter output power, change in the type or length of the transmission line, and/or installation of filters or diplexers.

NOTE: Class A stations eligible for a power increase pursuant to paragraph (c)(4) are those which appear on a list issued by the Commission in November 1989.

A P P E N D I X B

SUPPLEMENTAL EXHIBIT TO FCC FORM 302

Increase in Effective Radiated Power of Class A FM Broadcast Station
Pursuant to 47 CFR 73.1690(c)(4)

1. Would a Commission grant of an application for the increase in effective radiated power specified in this filing constitute an action that may have a significant environmental effect (as defined in 47 CFR 1.1307)?

Note: Applicants must consider whether the increase in effective radiated power would cause exposure of workers or the general public to levels of radio frequency radiation in excess of the "Radio Frequency Protection Guides" recommended in "American National Standard Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz," (ANSI C95.1-1982) by the Institute of Electrical and Electronics Engineers, Inc., 345 East 47th Street, New York, NY 10017.

YES []

NO []

2. If you checked YES to question number 1:

(a) you may not begin operation with increased effective radiated power until you receive Commission approval to do so; and,

(b) you must submit an Environmental Assessment (47 CFR 1.1311).

Environmental Assessment

Exhibit No.

--

3. If you checked NO to question number 1, explain briefly why such a grant would not be an action that may have a significant environmental effect.

CERTIFICATION OF COMPLIANCE

The undersigned licensee of the Class A FM broadcast station for which operation with increased effective radiated power is sought or has begun hereby certifies that such operation is in compliance with all applicable Commission rules and policies, and that, in the event that the Commission finds that such operation is not in compliance with any applicable Commission rule or policy and notifies the licensee of this finding in writing, the licensee will immediately return the station to the power specified in its license.

Licensee (print or type)

Title

Signature

Date

FOOTNOTES

¹ See *Notice of Proposed Rule Making* in MM Docket 88-375, FCC 88-251, released on September 12, 1988, 3 FCC Rcd 5941 (1988).

² The Commission's proposals were based largely upon requests contained in two petitions for rule making: RM-6236, filed on June 16, 1987 by Petaz Communications, Inc., which requested the establishment of an additional intermediate FM station classification in Zone II; and RM-6237, filed on September 1, 1987 by the New Jersey Class A FM Broadcasters Association, which requested that the maximum permitted effective radiated power for Class A FM broadcast stations be increased from 3000 to 6000 watts. Both petitions were listed on Public Notice Report No. 1709, dated January 27, 1988.

³ A list of parties submitting formal comments, replies, and informal letters appears as Appendix B to the *First Report and Order*, FCC 89-107, 4 FCC Rcd 2792 (1989).

⁴ See *First Report and Order* in MM Docket 88-375, FCC 89-107, 4 FCC Rcd 2792 (1989).

⁵ See *Notice* at paragraph 17.

⁶ See *Notice* at paragraph 18.

⁷ See *Notice* at paragraph 19.

⁸ See *Notice* at footnote 24.

⁹ When an FM signal on a first adjacent channel is sufficiently strong in comparison to the desired FM signal, some FM radios will experience a momentary loss of capture, sometimes described as "bleed through," which is characterized by sporadic bursts of the undesired adjacent channel signal interrupting and disturbing the desired signal. Also under such circumstances, some FM receivers, particularly older ones, will suffer "AFC pulling". This is where the AFC (automatic tuning) circuit in the receiver, which is supposed to keep the receiver "locked on" to the desired signal, becomes overwhelmed by the strong adjacent channel signal and momentarily tunes the receiver to the undesired signal frequency. Both of these phenomena happen most often in mobile receivers and are very annoying to listeners.

¹⁰ Comments of Greater Media at 12, paragraph 17.

¹¹ Reply comments of New Jersey at 18.

¹² These effects result from overall weak signal strength and multipath interference. Multipath interference is characterized by distortion of the received audio. It is caused by the recombination of two or more portions of an FM signal which, having traveled to the receiving antenna by different paths (perhaps being reflected off of an obstruction), arrive partially or completely out of phase, thus to some degree cancelling each other. "Picket fencing" is a rapid and wide variation in signal strength that generally occurs when a receiver in motion (such as in an automobile) passes through an area subject to multipath interference. "Dead spots" are locations where signal levels are consistently too weak for adequate reception.

¹³ According to Nutmeg, Stafford Springs is a small village with 10,000 population that currently has no local daily newspaper and no local radio station.

¹⁴ Comments of Massachusetts at 2 and 3.

¹⁵ In the text of the proposed rules contained in Appendix A to the *Notice*, on page 4 at instruction 4, the Commission proposed that the minimum ERP requirement for Class B1 stations be increased in accordance with Class A maximum ERP. Currently, Class B1 station ERP must exceed 3000 watts. Under the proposed rule, Class B1 ERP would have to exceed 6000 watts. At the same time, the Commission proposed a new Class C3 FM station classification. Under that proposal, Class C3 station ERP would also have to exceed 6000 watts. However,

because the maximum power for Class A stations was 3000 watts when the new station Class C3 was established, the rules currently require that Class C3 station ERP must exceed 3000 watts.

¹⁶ The class contour distance is the predicted distance to the 1 mV/m (60 dBu) contour, rounded to the nearest kilometer, for a station transmitting with the maximum effective radiated power (ERP) for its station class and employing an antenna HAAT equal to the reference antenna HAAT for its class specified §73.211 of the rules. The class contour distance is used to calculate the lower ERP required when an antenna HAAT higher than the reference HAAT for the station class is employed.

¹⁷ See *Notice* at paragraph 25.

¹⁸ Comments of AFCCE at 3, paragraph 7.

¹⁹ Comments of New Jersey at 7.

²⁰ See *Notice* at paragraph 26.

²¹ Proposed METHOD 1 incorporates the concept of a "blanket" power increase for Class A FM stations, and to that extent is similar to the action requested by the New Jersey Class A FM Broadcasters Association. The principal difference between METHOD 1 and the method advocated by New Jersey is that the latter envisions *unconditional* power increases for grandfathered short-spaced stations, whereas METHOD 1 would only allow such increases subject to §73.213 of the rules. Despite this difference, some of the commenters refer to METHOD 1 as the "New Jersey plan."

²² Grandfathered short-spaced stations are (1) stations at locations authorized prior to November 16, 1964 that did not meet the minimum distance requirements on that date and that have remained short-spaced since that date; and (2) stations at locations authorized prior to May 17, 1989, that did not meet the IF separation distances required by §73.207 and have remained short-spaced since that time. See §73.213 of the Commission's rules, which defines grandfathered short-spaced stations and sets forth the conditions under which they may be modified or relocated.

²³ This study, entitled "Analysis, using Protected Contour Method, of the Effects of a Power Increase for Class A FM Stations" was attached to the full-text release of the *Notice* as Appendix B.

²⁴ See *Notice* at paragraph 28.

²⁵ The idea of allowing a power increase for only those Class A stations that meet increased distance separation requirements originated with the initial comments (to the New Jersey petition for rule making, RM-6237) of two organizations, the National Association of Broadcasters and the Association for Broadcast Engineering Standards. Consequently, some commenters refer to METHOD 2 as the "NAB/ABES plan."

²⁶ See *Notice* at paragraph 31.

²⁷ Comments of New Jersey, Engineering Exhibit by Mullaney Engineering, Inc., at 6.

²⁸ Comments of New Jersey at 4 and 5.

²⁹ Reply Comments of Main Street at 7.

³⁰ Comments of Brattleboro at 3.

³¹ Comments of New Jersey at 6.

³² Comments of Drexel at 2 and 3.

³³ Reply Comments of Greater Media at 5.

³⁴ Comments of Vacationland at 3.

³⁵ Comments of Universal at 10.

³⁶ Comments of ABES at 7.

³⁷ Comments of Greater Media, Summary at i.

³⁸ In the *Notice*, at Appendix B, the Commission also used the 0.5 mV/m field strength contour to approximate the primary service area of Class B stations. However, the Commission characterized the potential loss of service (less than 2%) to be small. Use of 0.5 mV/m instead of the precise predicted field strength at 40 miles (0.519 mV/m) is more convenient, and the result is essentially the same.

³⁹ Comments of Greater Media at 16.

⁴⁰ Reply Comments of Massachusetts at 3.

⁴¹ Comments of Vacationland at 5.

⁴² Reply Comments of Massachusetts at 3.

⁴³ Reply Comments of New Jersey at 8.

⁴⁴ *Id.* at 19-20.

⁴⁵ Reply Comments of Greater Media at 6.

⁴⁶ Comments of ABES at 7.

⁴⁷ Reply Comments of CBS at 3.

⁴⁸ Comments of NAB at 6.

⁴⁹ Comments of NAB at 9.

⁵⁰ Reply Comments of Main Street at 6.

⁵¹ Comments of Stoner at 2, 3.

⁵² Comments of KLP at 2-3.

⁵³ Comments of dLR at 5 and 6.

⁵⁴ See *Notice* at paragraph 32.

⁵⁵ Under the proposal the following stations would be excluded: stations located near FOB monitoring locations, within the Mexican or Canadian coordination zones, or the "quiet zones," and stations for which the power increase could result in exposure of workers or the public to radio frequency energy in excess of American National Standards Institute guidelines (ANSI C95.1-1982).

⁵⁶ FCC Form 302 is used to apply for a new or modified FM station license. It is shorter and less comprehensive than FCC Form 301, which is used to apply for a new or modified non-reserved band FM construction permit. Sections 73.1690 and 73.3544 of the Commission's rules already require that FCC Form 302 be used in situations where a modified FM station license is necessary to reflect changes in a station, but prior approval from the FCC is not required to make the changes.

⁵⁷ The power increase would be considered a minor modification regardless of which form were used.

⁵⁸ See *Notice* at paragraph 34.

⁵⁹ ABES notes that even if METHOD 1 were to be adopted, compliance with intermediate frequency minimum distance separation requirements would still be necessary.

⁶⁰ Comments of ABES at 13 and 14.

⁶¹ All current distance separation requirements are bilateral, that is both FM stations must comply with the applicable requirements, even if one of the two stations is a NCE-FM station. Consequently, changes in these requirements may constrain NCE-FM stations from making station modifications that would have previously been permissible.

⁶² See *Notice* at paragraph 35.

⁶³ Comments of NPR&CPB at 5-6.

⁶⁴ *Id.* at 6.

⁶⁵ *Id.* at 6-7.

⁶⁶ *Id.* at 7.

⁶⁷ See *Notice* at paragraph 37. See also *Third Report and Order* in MM Docket No. 86-144, FCC 89-62, 54 FR 14961, April 14, 1989. The Commission adopted revisions to the minimum IF channel distance separation requirements based on maintaining a uniform 36 mV/m protection level from IF interference.

⁶⁸ Comments of AFCCE at 9, paragraphs 19-20.

⁶⁹ In Puerto Rico and the Virgin Islands, the current reference HAAT for Class A stations is 335 meters. The Commission is reducing this to 240 meters in order to maintain the current class contour distance of 42 kilometers. Thus Class A stations in Puerto Rico and the Virgin Islands may increase power but not coverage. (The Commission previously established special ERP-HAAT combinations for FM stations in Puerto Rico (*Fourth Report and Order* in Docket No. 14185, 3 RR 2d 1571) and the Virgin Islands (*Report and Order* in Docket No. 18050, 13 RR 2d 1536) in view of the extreme terrain variations on these islands and other factors.) These stations already have far more predicted coverage than their mainland counterparts.

⁷⁰ See §73.211(b)(2).

⁷¹ There is no station class lower than Class A. The minimum ERP for Class A is 100 watts.

⁷² New minimum power requirements for Classes C3 and B1 were specified in the proposed amendments to §73.211 of the Commission's rules. See Appendix A to the *Notice*, page 4, instruction 4.

⁷³ Of the two stations that operate with less than the new minimum, WNNJ and KRLT, each has special circumstances which necessitate operation with the facilities authorized.

⁷⁴ Existing grandfathered short-spaced stations may be modified or relocated, provided that their predicted 1 mV/m F(50,50) field strength contour is not extended toward the predicted 1 mV/m F(50,50) field strength contour of the other station(s) to which the grandfathered short spacing applies. Consequently, grandfathered short-spaced stations will most likely have to relocate, reduce antenna height, and/or employ a directional antenna in order to increase power.

⁷⁵ The service area for the average non-reserved band FM station broadcasting with maximum effective radiated power for its station class and an antenna height above average terrain equal to the reference HAAT for its station class is a circle with a radius as follows:

Station Class	Service Radius
A	24.1 kilometers (15 miles)
B1	45 kilometers
B	64.4 kilometers (40 miles)
C3	39 kilometers
C2	52 kilometers
C1	72 kilometers
C	91.7 kilometers (57 miles)

Terrain is assumed to be uniform in all directions. The radii for the original station classes (A, B and C) were specified in miles. The radius for Class C was originally 65 miles, but this later became 57 miles as a result of revision of the propagation curves. Those for the newer classes established in BC Docket No. 80-90 and for Class C3, which was established in the *First Report*, were specified in kilometers, in accordance with the Commission's policy to use metric units. The Commission is increasing the Class A service radius from 15 miles (24.1 kilometers) to 28 kilometers in this decision.

⁷⁶ By protecting service, the Commission means that FM stations are assigned in such a way that, on the average, within the protected service area of each station, the signals of other FM stations are too weak to degrade reception of the protected signal below a certain minimum audio signal quality. This actual signal quality is affected by many factors, such as whether the desired FM signal is stereophonic or monophonic, whether or not it has subcarriers, and whether the surrounding environment is urban, suburban, or rural. The audio signal quality

translates into radio frequency signal protection ratios, which in turn underlie technical assignment rules and policy. The standards currently used were re-examined and affirmed in BC Docket 80-90, and are not being reconsidered here.

⁷⁷ Comments of Greater Media at 7, paragraph 9.

⁷⁸ Comments of NAB at 5 and 9.

⁷⁹ Comments of Bonneville International Corporation at 3, Westinghouse Broadcasting Company, Inc. at 2, Great American Television and Radio Company, Inc. at 1 and 2, Fuller-Jeffrey Broadcasting at 5, paragraph 7.

⁸⁰ See *Report and Order* in BC Docket No. 80-90, FCC 83-259, 94 FCC 2d 152 (1983), at paragraph 62. The Commission considered the possibility of reducing the Class B service radius from 40 to 33 miles in order to create opportunities for additional new stations, but declined to do so, because the number of potential new stations was too small to justify the loss of existing primary service area.

⁸¹ The term "go - no go" means that assignments are made in accordance with fixed, readily determined criteria (e. g. separation requirements), such that applicants and the Commission can expeditiously determine whether an individual application can be granted or must be denied. See *First Report and Order* in Docket No. 14185, FCC 62-866, 40 FCC 666 (1970) at paragraph 9.

⁸² Comments of NAB at 3, last paragraph.

⁸³ The Commission will consider any Class A station for which the distance to the predicted 34 dBu F(50,10) field strength contour does not exceed 98 kilometers to have no more interference potential than a Class A station operating at the current 3000 Watt, 100 meter maximum facilities. Some examples of acceptable ERP - HAAT combinations under this provision are as follows:

ANTENNA HAAT	ERP
30.5 meters (100 feet)	5800 watts
45.7 meters (150 feet)	5000 watts
61.0 meters (200 feet)	4300 watts
76.2 meters (250 feet)	3700 watts
91.4 meters (300 feet)	3200 watts

⁸⁴ The Commission is reducing two of the current minimum distance separation requirements: Class A to Class C, first adjacent and second/third adjacent channels, from 169 and 105 kilometers to 165 and 95 kilometers, respectively. The current requirements are larger than necessary to provide full protection (they are two of the anomalies in the table of minimum separation distance requirements). Furthermore, the Commission recently adopted a Class C3 to Class C second/third adjacent requirement of 96 kilometers, and it is illogical for the Class A requirement to be more stringent than the Class C3 requirement.

⁸⁵ In such a case, field strength would be increased even though range (coverage) and interference potential would not exceed that of a 3000 watt, 100 meter Class A station.

⁸⁶ These prior grandfathered short-spaced stations can be modified or relocated provided that the predicted 1 mV/m F(50,50) field strength contour is not extended toward the 1 mV/m contour of any other short-spaced station. Simultaneous facilities increases may be permitted, up to the limits in §73.211 (including the new 6000 watt Class A power limit), pursuant to agreements among the stations and a showing that such increases are in the public interest. See §73.213 and §73.4235.

⁸⁷ The Class A to Class C1 increase is only 1 kilometer, which should not result in the "grandfathering" of many NCE-FM stations.

⁸⁸ Only Channel 220 is affected.

⁸⁹ It may be necessary to exclude Canadian and Mexican border area Class A stations from the initial list and to publish subsequent lists for these stations when international coordination procedures are complete.

⁹⁰ Because the appearance of a particular station does not constitute a modification of license, the Commission may correct the list of stations by adding or deleting stations included or excluded by administrative error without affording subject stations the opportunity for hearing.

⁹¹ This includes replacement of the transmitter with one capable of higher power output.

⁹² The supplemental exhibit is provided as Appendix B to this order. It contains a question and an informational showing requirement related to the potential for exposure of workers or the general public to hazardous levels of radio frequency energy. It also contains a certification that the licensee has conducted appropriate technical studies to determine that the increased power operation complies with the Commission's rules, and that the licensee agrees to immediately, upon written notification from the Commission, reduce power back to the level specified in the station license, if the Commission determines that the increased power operation is not in accordance with the rules.

⁹³ If an FCC Form 302 or supplement reveals any discrepancy from the licensed parameters of record (e.g., geographical coordinates, antenna heights), the Commission delegates authority to the Chief, Mass Media Bureau, to order that the Class A station be returned to its licensed parameters, and to require the station licensee to file other forms or informational showings as necessary.

SEPARATE STATEMENT OF COMMISSIONER PATRICIA DIAZ DENNIS

In Re: Amendment of Part 73 of the Rules to Provide for an Additional FM Station Class (Class C3) and to Increase the Maximum Transmitting Power for Class A FM Stations.

This Report and Order strikes the right balance. Class A broadcasters, in great numbers, have urged us to increase their power. Suburban sprawl and other demographic changes have made it impossible, in many cases, for Class A stations to reach their natural market. In addition, Class A station say they suffer from shadowing problems resulting from tall buildings or uneven terrain; problems in penetrating steel or concrete buildings; and interference resulting from temperature inversions. With more power, Class A stations could overcome some of these obstacles. On the other hand, many Class B and C licensees argued that Class A stations should not be permitted to cause interference to other stations.

In this proceeding, we have increased maximum power for Class A's to 6000 watts, and increased our spacing requirements to account for the increased power. Stations that comply with the new spacing requirements will be able to increase power quickly, even before we process their applications. We will allow other Class A stations to increase power on a case-by-case basis.

At the same time, we are providing Class B and C stations the same level of interference protection that they enjoy under our current rules. By taking this measured

approach, we have given significant relief to Class A stations while maintaining the integrity of the FM Table of Allotments.

My greatest concern in voting for this item is that it will further strain our already limited resources. Make no mistake-- this decision will significantly increase the processing time for all FM applications. Without additional resources, the staff estimates that the median processing time for FM applications will increase from four months to twelve months. The median age of minor change applications will increase from six months to 18 months. Longer processing time is costly to the entire FM radio industry because initiating new service or changing an existing facility will no longer be accomplished as quickly.

Nevertheless, I cannot vote to deny relief to Class A broadcasters solely because of the delays this action will create for Class A stations and other FM applicants. In light of the continuing, severe pinch on our resources, I hope that Congress will see fit to give us the money we sorely need to do our job more efficiently.