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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	MM Docket No. 99-25
Creation of a Low	)	
Power Radio Service	)	RM-9208
	)	RM-9242
	)	

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To: The Commission

COMMENTS
OF
J. RODGER SKINNER, JR.

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COMMENTS

OF

J. RODGER SKINNER, JR.

J. Rodger Skinner, Jr., pursuant to the *Notice of Proposed Rulemaking ("NPRM"), FCC 99-6 (released February 3, 1999),* hereby submits these Comments in the above-captioned rule making proceeding regarding the proposal to create a new low power radio service. In support hereof, I submit the following:

SUMMARY

1. I am the author of the Petition for Rulemaking RM-9242 in this proceeding, much of which formed the basis of the instant proposal (FCC 99-6). I support the creation of a Low Power Radio Service as put forth in the Commission's *NPRM*, with some modifications as detailed in these comments. I will show the need for two extremely important changes to the NPRM in these comments -

a) the need to increase the LP-1000 class maximum antenna height from 60 meters to 100 meters (see paragraph-13 herein) AND

b) the need to use **both** mileage separations **AND** a "prohibited contour overlap" method of processing in lieu of only the proposed mileage-separation tables (see paragraphs-17 & 18 herein). This will allow for the use of "directional antennas", in many cases where mileage separations are not met and will greatly increase the number of LPFM stations that may be created nationwide, without imposing any undue processing burden on the Commission or delaying implementation of service to the public or placing a heavy burden on LPFM applicants. An applicant could still do a quick automated "self-check" of frequency availability online at the FCC website and file for a frequency, if found. If none is available using the Commission's mileage separation tables then the applicant could conduct an engineering study and submit an application based on "contour predictions" and possible use of a directional antenna, if needed. This dual method of processing is needed to implement a workable LPFM service, otherwise hundreds possibly thousands of LPFM stations will be precluded by the Commission's attempt to oversimplify the application process. This is unacceptable, since the computer programs and

databases are already available to the Commission to allow both methods of processing and using a "first come first served" method would eliminate the vast bulk of processing required by the Commission.

I wish to take this opportunity to congratulate the staff and Commissioners for a superb job in creating the *NPRM,* given the complexity and scale of this proceeding.

2. By way of background -

a) I have extensive experience in broadcasting spanning over thirty-five years. This experience includes engineering, on-air as DJ and newsman, copywriting, production, promotion, sales account executive and later station owner/operator.

b) In 1976, I founded Tunnel Radio of America, Inc., secured approval from the full five-member FCC as well as the Florida Department of Transportation and created the world's first commercial tunnel radio station in the New River Tunnel at Ft. Lauderdale, Florida. FCC rules Section 15.211 was developed as a result of this pioneering work.

c) I also participated in the rule making that established the Low Power Television service and have continued working over the years to improve this service, which is now comprised of over two-thousand LPTV stations nationwide.

d) In 1980, I founded TRA Communications Consultants, Inc. and since then have prepared and filed numerous full-power FM and Low Power Television applications at the Commission on behalf of clients nationwide.

e) Since 1988, I have owned and operated Low Power Television stations as a Commission licensee. I am currently the licensee of LPTV station WFUN-LP at Miami-Fort Lauderdale, Florida.

f) For many years I have held the FCC First Class Radio Telephone license, now called the General Radio Telephone license. I also hold the Extra Class amateur radio license, licensed first in 1959, and currently hold the callsign W4FM.

It is this wide breadth of experience that has enabled me to lay the groundwork, in RM-9242, for a workable Low Power FM Radio Service and to comment now on the instant proposal. I will attempt to comment on items within FCC 99-6 in the order in which they are addressed in that document, consisting of one-hundred twenty-four paragraphs.

I. SERVICE PROPOSALS AND ISSUE ANALYSIS

A. Need for Low Power Radio Service

3. Since the passage of the Telecommunications Act of 1996, we are seeing a concentration of media never before witnessed in America. Large companies and public corporations with almost unlimited resources have acquired vast numbers of stations at an alarming rate, forcing the prices of stations even higher and severely limiting the number of voices. In the past, one company could own six, then twelve stations nationwide. Today some companies own hundreds, with no limit imposed! The negative impact of this massive consolidation is being felt even in the smallest markets across the country, resulting in fewer voices/opinions on the airwaves. The long coveted principle of diversity of ownership in media seems to have fallen by the wayside in the rush to deregulate this industry. This need not be the case, as will be shown in these comments. The negative effects of consolidation include but are not limited to:

a. *Lessening of service to individual communities* by the owners of these consolidated stations. I have heard stories of stations that used to air weather-related school closings now abandoning such announcements leaving the public to fend for itself. Dog/cat lost and found announcements seem to have become a thing of the past with these stations as well. News departments that used to consist of local reporters who would gather and air local news now consist of an automation system that airs some distant network newsfeed with no reporting of local news as before.

b. *Unfair trade practices* being used by the large station group owners. I have heard complaints from ad agencies that they are being forced to buy time on undesired stations in order to be able to buy time on the more desirable stations commonly owned by large group operators. Monies that would have gone to independently owned stations are going to the larger group owned facilities due to this effect.

c. *Loss of jobs, particularly at the entry level,* is another negative effect of consolidation. When large group owners buy up several stations in a market, it is quite common for them to reduce their operating staff by giving some duties at several stations to one individual and

reducing the operating staff dramatically. While this economy of scale is applauded in the board room, it is soundly rejected at the dinner table of those who have lost their jobs due to this consolidation.

d. *Fewer voices and loss of diversity of opinion* on the airwaves. Another common practice of large group operators after consolidation has been to stop airing programming produced locally and replace it with satellite fed programs with a *one size fits all* approach. While some of this programming has some merit it is often aired on more than one station under common ownership in a market thereby decreasing the amount of listening choices available to the public. Some large group owners are now indulging in *vertical consolidation*, buying up the rights to many national shows such as "Dr. Laura" and "The Art Bell Show", as two examples. It is quite apparent that fewer owners means fewer opinions being aired. The Low Power Radio Service will go a long way to improve this condition. Some recent articles in the trade press lead me to believe that the Commission and some Commissioners in particular are fully aware of the many negative effects of consolidation.

B. Spectrum Considerations

4. I firmly believe that a Low Power Radio Service, as proposed herein with the requisite changes recommended herein, could provide new entrants the ability to add their voices to the existing mix of political, social, and entertainment programming and could address special interests shared by residents of their community(s). It is apparent that people of somewhat limited financial means cannot afford their own full-power radio stations and that the Low Power Radio Service is the only means available for radio station ownership, if approved by the Commission. I know from personal experience that radio stations in the South Florida area sell for many millions of dollars each. FM stations have been trading in excess of $50 million dollars each while AM stations range from $3-$12 million and up. Since these figures are beyond the reach of most small business people this effectively closes the door to new small business entrants not only in South Florida but in every major market around the country. It is in these major markets where no new channels exist for application, under present rules, that the need for a Low Power Radio Service is so dramatic. By eliminating the 2nd and 3rd adjacent channel restrictions, along with use of a

"prohibited contour overlap" method of processing Low Power FM ("LPFM") applications that will allow for the use of directional antennas, an effective Low Power Radio Service can be created and still maintain the technical integrity of the FM band. Indeed, the efficiency of the FM band will be increased without introducing objectionable levels of interference. I agree with the Commission's assessment that the Low Power Radio Service offers opportunities to potential broadcasters and listeners for which there are currently no comparable alternatives.

5. While this commenter understands the desire for some non-commercial stations, I do not agree with some who argue for non-commercial status for all LPFM stations. Indeed, I suspect some might have an agenda that involves trying to kill the LPFM service altogether and failing that, render it useless by restricting it to non-commercial only service. I support the creation of both non-commercial and commercially-supported stations. The idea of selling commercials to support a radio station has been a successful tradition in this country for over seventy-five years and this common means of support must not be denied to LPFM stations. Indeed, to prohibit commercial support to LPFM would be to doom the service from creation. Likewise, I will show elsewhere in these comments the need to not only create a commercially-supported LPFM service but to modify some of the details in the FCC's proposal to allow for adequate revenue to support such stations. I support keeping the current bandplan of only non-commercial stations operating in the 88-92 MHZ portion and commercial stations in the 92-108 MHZ portion of the FM band. As always, a station owner/operator can operate in a non-commercial manner in either part of the band. Thus, there are many more channels available for non-commercial operation than for commercial operation, due to this operating allowance. Commercial operation is not allowed in the 88-92 MHZ portion of the band. There is no need to make the new service strictly non-commercial and the Commission should reject this premise outright. Most new LPFM stations will need the support of advertising to maintain operations. Indeed, there is a very positive benefit that flows to the community by allowing commercial operation for LPFM stations. Small businesses that have heretofore been precluded from affording radio advertising will now have it available to them for the first time. LPFM stations with their smaller coverage areas will more closely match the trading area of local stores and outlets, which normally does not exceed twelve miles. These small businesses usually cannot afford the

advertising on full-power stations that cover much larger areas and this expensive coverage is *wasted* on the small business with only one or two locations. Since frequency of ads is important in radio advertising, the LPFM station with its lower rates will allow small local outlets to achieve the frequency needed for effective radio advertising. I saw this first hand recently when my son opened a surfshop and could afford only a *few* spots on the 100,000 watt FM station that appealed to his demographics. This station covers several counties and, of course, its spot rate is reflective of this wide coverage. While this may be good for McDonalds or other large chains, it was not efficient advertising for my son's surfshop with one location since most of the listeners were too far away to consider driving to his one location. Maybe someday there will be a LPFM station in his market area to address this problem for him and many other small businesses with the same problem. Multiply this scenario thousands of times, nationwide, and you get some idea of the amount of good that could be achieved by a Low Power Radio Service.

6. This commenter supports the creation of the LP-1000 and LP-100 class stations as put forth in the FCC proposal, with some modifications. After careful consideration, I no longer support creation of stations in the 1-10 watt range and I will give more details on this decision later in these comments. Insofar as LP-1000 and LP-100 stations may desire to have studios separate from their transmitter sites, it is imperative that auxiliary services such as studio-transmitter link (auxiliary broadcast) frequencies be available to these stations. Since I support "secondary status" service for LP-100 stations and "primary status" for LP-1000 stations, I would suggest making auxiliary broadcast frequencies available to LPFM stations on the same basis, "secondary status" for LP-100 and "primary status" auxiliary facilities for LP-1000 stations.

7. Consideration of the AM band for a Low Power Radio Service would not be appropriate due to the interference potential, due especially to night time skip conditions and the general congestion of the AM band.

8. Consideration of spectrum outside the FM band would not be appropriate since to allocate such spectrum not currently used for broadcasting would require consumers to buy new equipment in order to receive such broadcasts and thus would likely have a substantial dampening effect on any new service. Restricting LPFM to one channel is not appropriate since there is no one channel available nationwide for LPFM use and to limit use to one station per market/area

would not substantially add to the diversity of opinions on the airwaves and would be counter-productive.

9. Due to the fact that many LPFM broadcasters will want to situate their studio at some distance from their transmitter/tower site, it is imperative that auxiliary broadcast frequencies be made available to them. LP-1000 primary-class stations should receive auxiliary frequencies on a primary basis while secondary-class LP-100 stations should be able to use such auxiliary frequencies on a secondary basis consistent with their secondary-class station license. LPFM stations need auxiliary broadcast frequencies for studio-transmitter (STL) links as well as for remote broadcasts.

10. I support the idea of *primary-status* for LP-1000 class stations and *secondary-status* for LP-100 class stations. The LP-100 should be a "secondary service" and be available to those types of broadcasters who do not wish to conform to a more structured and/or regulated form of broadcasting that will be required of LP-1000 licensees. Although these licensees will not have to adhere to most Part 73 regulations, except for spectral purity and various broadcast taboos, this license will be issued as a "secondary-service", meaning that the licensee must vacate the channel if a full-power station becomes short-spaced (based on desired to undesired signal ratios) due to an antenna site move or power increase, or application by a LP-1000 primary service station applicant.

11. A LP-100 station should receive contour protection (1 mV/m) only from other LP-100 class stations. It is the general intent of this license to be an interim class in that it may be less costly to start a station as a LP-100 and then upgrade to LP-1000 status at a later time. A LP-100 station threatened by displacement by a LP-1000 class station or other primary user, should have sixty days in which to apply to upgrade to LP-1000 class and retain its license; otherwise, it may be displaced by a LP-1000 class applicant or other primary user. Applications for class LP-100 stations should include an engineering showing of non-interference on co-channel and first adjacent channels meeting the required desired/undesired signal ratios set forth in these comments. Many schools, churches or community groups may wish to begin as a LP-100 class station with minimal restrictions and then consider upgrading to LP-1000 class at a later date to secure primary status.

II. TECHNICAL OVERVIEW OF LPFM SERVICES

A. 1000-Watt Primary Service ("LP-1000") Stations

12. I continue to support my original idea, as put forth in my Petition for Rulemaking RM-9242, that a single class of LPFM license would not accommodate the different visions and service demands of potential low power radio licensees. Thus I support the creation of the LP-1000 primary status stations as well as the LP-100 secondary class stations, with some modifications however to what was proposed in the NPRM.

13. At paragraph-23 in the NPRM, the Commission proposes a LP-1000 class station with an effective radiated power ("ERP") of 1000 watts and a maximum antenna height above average terrain ("HAAT") of 60 meters (197 feet). I agree with an ERP limit of 1000 watts for LP-1000 primary status stations. While trying to understand why the Commission would want to limit LP-1000 stations to a maximum antenna height (HAAT) of 60 meters, the only reason I could get from Commission staffers was the idea that FM applications proposing an antenna height under 200 feet would be exempt from having to file a Form 7460-1, Notice of Proposed Construction, with the FAA. I believe this artificial limitation to be arbitrary and harmful to a new low power radio service and propose an antenna height limit of 100 meters as opposed to 60 meters put forth in the NPRM. At paragraph-28 of the NPRM, the Commission speaking of LP-1000 primary class stations says, "These stations would operate under the majority of the service rules and obligations applicable to primary stations generally." Thus, it makes sense that since these LP-1000 stations must abide by the majority of rules applicable to full-power primary FM stations, that to require them to file FAA 7460-1 forms would not pose any undue burden on them. Since present lowest class "Class-A" full-power (6 KW max.) stations have a limit of 100 meters for antenna height, it seems only logical that the highest class LP-1000 stations, although limited by lower ERP, should have the same 100 meter antenna height limit. The old Class-A (3KW) stations also had a 100 meter antenna height limit. Under the NPRM a LP-1000 with 1000 watts ERP and HAAT of 60 meters would produce a 60 dBu signal contour of 14.2 kilometers (8.8 miles). Increasing the same stations HAAT from 60 meters to 100 meters would increase the 60 dBu signal contour from 14.2 kilometers (8.8 miles) to 18.6 kilometers (11.6 miles). Note that there

still would be a considerable difference between the coverage of a LP-1000 and a full-power Class-A station, while allowing the LP-1000 a 100 meter antenna height maximum.

FACILITY COMPARISONS:

		Distance to 60 dBu Contour
As proposed in NPRM-		
LP-1000 with 1000 watts	60 meters HAAT -------	14.2 kilometers (8.8 miles)
As proposed in these comments-		
LP-1000 with 1000 watts	100 meters HAAT -------	18.6 kilometers (11.6 miles)
A full-power Class A station-		
Class-A with 6000 watts	100 meters HAAT -------	28.3 kilometers (17.6 miles)

Figures in chart derived from FCC propagation curves F(50/50)

I believe this new antenna height limit of 100 meters for LP-1000 will work well and provides a reasonable compromise between the size of LP-1000 service areas and the preclusion of other radio services. For example, by increasing the antenna height maximum from 60 meters to 100 meters, a LP-1000 station would preclude authorization of another LP-1000 station on the same channel within 79 kilometers (49.1 miles) as opposed to the previous distance of 65 kilometers (40 miles). This small increase is more than offset by the gain in service area for the LP-1000, which translates directly into increased financial sustenance for the small station. Besides being a logical extension to the LP-1000 primary class stations, it is quite important to their economic survival. I recall that owners of the old Class-A stations (3 KW @ 100 Meters) complained that they needed more power (coverage area) to compete in the marketplace and the Class-A service was increased to 6 KW @ 100 meters. The same will apply to LPFM stations with even smaller coverage areas. The extra 4.4 kilometers (2.7 miles) coverage to the 60 dBu contour on the outer ring of the LP-1000 coverage area will add an additional 179.4 square miles of area. This area and its corresponding population could well mean the difference between financial sustainability or financial failure for such a small station. I feel that a LP-1000 station

given an antenna height maximum of 100 meters should be able to survive financially in the marketplace, given interesting programming and a good sales staff. The 11.6 mile radius of coverage with 100 meters antenna height more closely matches the trading area of most small businesses (approx. 10 miles). This will benefit the small business advertisers as well as the LPFM station operator equally. **These LPFM stations must be able to survive economically in a very competitive marketplace** or many will be forced to go dark, with owners dreams shattered and lessened service to the public. Having sold radio advertising for several stations for several years, I know of nothing more important than signal coverage to a radio station. It's been said that mediocre programming can succeed on a *good signal* but even excellent programming will fail on a *poor signal*. The old adage, "*If they can't hear it, they can't listen*" rings true and is applicable here. There is no good reason to artificially limit LP-1000 stations to a maximum antenna height of only 60 meters, since these stations will have to abide by the vast majority of rules applicable to full-power FM stations. **As shown above, it is absolutely imperative that LP-1000 stations be given a maximum antenna height of 100 meters.**

14. Since a great deal of radio listening is done in the automobile, it is important that the LPFM station have a coverage area large enough so that a motorist will not be out of range too quickly. While, I realize that some very small market stations will not need the maximum limits of 1000 watts and 100 meters HAAT as proposed herein, it is important that it be available to those stations that do need to cover all of a large city or even rural areas. To adopt less than 1000 watts and 100 meters HAAT maximums for the LP-1000 service would severely hamper the ability of such stations to succeed in many markets. Stations in very small markets that do not need the maximum range of coverage described above could operate at lower power levels, down to 500 watts and lower antenna heights. For example 500 watts at 100 feet would produce a 60 dBu signal contour at a distance of 8.6 kilometers (5.3 miles). Thus, the LP-1000 class station with a maximum limit of 1000 watts @ 100 meters HAAT and a minimum limit of 500 watts @ approximately 30 meters (100 feet) would produce coverage with a 60 dBu contour from 8.6 kilometers (5.3 miles) to 18.6 kilometers (11.6 miles). This range should be sufficient for both large and small markets.

15. I believe that the Commission could waive the I.F. protection requirements for LPFM

stations since the overlap of 36 mV/m (91 dBu) contours would occur within less than two miles of the LPFM antenna site, if at all. Imposing this restriction on LPFM stations could severely limit the number of stations available nationwide, especially in major markets where the need for these new stations is greatest. This area of possible interference, less than 2 miles, is equivalent to the "blanketing-area" of possible interference expected from a full-power 100,000 watt station operating at maximum facilities. This "blanketing-area" for a maximum facility full-power FM is approximately two miles as shown in Section 73.310 of the rules, which describes this area as within the 115 dBu contour of a FM station. I would suggest that the Commission use the same criteria for solving complaints of I.F. interference surrounding a new LPFM station in the same manner interference complaints resulting from a "blanketing-area"are handled per Section 73.218 of the rules. I would expect that such complaints would be few and far between and well within the ability of the LPFM station to resolve. This exemption from the present I.F. rules for full-power stations, where the areas of possible I.F. interference are much larger, would allow for the creation of many more LPFM stations, which should be a goal of this proceeding.

16. LP-1000 class stations, which shall originate local programming, should receive "primary status" with all the privileges that accompany that level of operation, including being primary over and above all manner of FM translators and boosters, which merely re-broadcast the signal of an existing full-power station. These FM translators and boosters operate as "secondary status" spectrum users and as such have no guarantee of keeping their frequency if needed by a primary user. These operators accepted their licenses knowing that they were "secondary status". In the alternative, if the Commission were to differentiate between the different types of FM translators, e.g., fill-in within the 1 mV/m contour of existing full-power FM stations, as compared to FM translators being fed via satellite or other means from distant sources then it may make sense to protect only the pre-existing (before the release of this NPRM) fill-in FM translators, if any at all. Great weight must be given to a primary service originating local programming (LP-1000 LPFM) thus increasing the number of voices or program choices in the community as opposed to protecting a FM translator which does not originate local programming but merely re-broadcasts an existing FM station in the market. Perhaps such a fill-in FM translator could be bumped by the primary LP-1000 LPFM applicant only if it could be shown that no other

frequency is available to the LP-1000 that would provide equal coverage. Thus the burden would be placed on the LP-1000 LPFM applicant to make such a showing and only as a last resort could he/she use the frequency of a fill-in translator. I don't believe distant-signal FM translators deserve even this level of protection. I believe the local service provided by a LPFM better serves the public interest as compared to a FM translator re-broadcasting a distant signal from outside the market. For this reason, FM translators, other than local signal fill-in translators, should receive no protection from LP-1000 LPFM stations. I do not support the use of FM translators or booster stations for LPFM stations, as I believe this practice could prove detrimental to the service and result in everyone trying to extend their area of coverage.

17. I have a very grave concern that the imposition of minimum station separation requirements (mileage separation tables) on the LP-1000 LPFM service could preclude the creation of hundreds of such stations nationwide. While I understand the Commission's desire to keep the application process as simple as possible, the negative trade-offs inherent in using a mileage separation table are totally unacceptable**, resulting in the preclusion of hundreds and possibly thousands of LPFM stations that could otherwise provide much needed local service while providing the same interference protections as under the mileage separation tables.** As the Commission's own findings (Appendix D of the NPRM) point out, there would be many major markets where no LP-1000 or very few LP-1000 stations could be constructed, even if both the 2nd and 3rd adjacent channel restrictions were lifted, using only strict mileage separations. These **major markets are where LPFM stations are needed the most** and every effort must be made to allow creation of LPFM stations in these markets. First and foremost, these major markets have **NO channels available** for application for a full-power station under existing rules. As a rule of thumb, the smaller the market and the greater its distance from major markets the better the chance of finding a frequency on which to apply for a full-power FM station. That is why the FCC Daily-Digest is full of FM allocations being assigned to many smaller markets almost on a daily basis while you never see a major market allocation being announced. Plain and simply, all the opportunities for building a new FM station in major markets are gone! LPFM is the only hope of providing new voices in these important areas. While new service is important in any area, a case can be made that more importance should be assigned to a new

station in a major market that could cover 100,000 people as opposed to a small market station that might only cover 5000 people. The point I am making is this.....
mileage separation tables in addition to "contour predictions" must be used in the LPFM service!

18. In lieu of using only mileage separation tables there is a much better method.....this method is the "desired to undesired signal ratio" method or sometimes called the "prohibited contour overlap" method or "contour predictions". With the proper computer program, which the Commission already has and uses to process Section 73.215 full-power FM applications, this method can be as simple and quick to process as the mileage separation tables but it gives much more flexibility to the applicant by allowing the use of a directional antenna to protect a station that might otherwise receive interference. By allowing the applicant to protect a station in one or more directions with a standard directional antenna, already used by some full-power FM stations, a vastly larger number of LPFM stations will be able to be constructed in major markets where the Commission's mileage separation tables show none to be available (see "Appendix D" of *NPRM*). Although there may be some extra work required of the applicant to attach an engineering showing to his/her application showing non-interference and while such a showing may require the services of a competent engineer, there need be no more work needed at the Commission for processing. Indeed, the staff need only plug the data from the "first-come first-served" application into their existing computer program to find the answer *will it fit or not*? If it fits, grant it! If it doesn't fit, reject the application. While this may require the use of a skilled engineer to prepare the engineering portion of the application, as in the Low Power Television service, it is a small price to pay to receive a FM frequency in any market and it will improve the quality of the applications received by the Commission, making their processing job easier. The huge costs previously associated with filing an application are gone since most of these fees went to attorneys to do battle at comparative hearings. The "prohibited contour overlap" method provides exactly the same interference protection as the mileage separation tables but allows for far more LPFM stations to be built.

19. **Technical Considerations / Interference Predictions -**

Protection for co-channel and first adjacent channels (above and below) in these

comments matches the existing protection of FM channels under current Commission rules (per Section 73.215), using a desired to undesired signal ratio and calculation of protected (desired) and interfering (undesired) contours based on propagation curves contained in FCC rules Section 73.333 figure 1 for F(50/50) protected contours and Section 73.333 Figure a for F(50/10) interfering contours. This method of desired to undesired (D/U) signal ratios is used to provide interference protection to full-power FM stations of all classes from full-power short-spaced FM stations and also has been used in the Low Power Television (LPTV) service successfully.

20. Co-channel interference is predicted to exist, for the purpose of this section, at all locations where the undesired (interfering station) F(50,10) field strength exceeds a value 20 DB below the desired service F(50,50) field strength of the station being considered (e.g., where the protected field strength is 60 dBu F(50/50), the interfering field strength must be 40 dBu F(50/10) or more for predicted interference to exist).

21. First-adjacent channel interference is predicted to exist, for the purpose of this section, at all locations where the undesired (interfering station) F(50,10) field strength exceeds a value 6 DB below the desired service F(50,50) field strength of the station being considered (e.g., where the protected field strength is 60 dBu, the interfering field strength must be 54 dBu or more for predicted interference to exist).

22. **Chart of Desired to Undesired Signal Levels for Interference Prediction:**

CO-CHANNEL:

	Protected Contour / Desired F(50/50) Field Strength Contour	**Maximum allowable Interfering Contour/ Undesired F(50/10) Field Strength Contour**
All classes (Except B and B1)	60 dBu	40 dBu
Class B1	57 dBu	37 dBu
Class B	54 dBu	34 dBu

FIRST-ADJACENT CHANNELS (above and below):

	Protected Contour / Desired F(50/50) Field Strength Contour	**Maximum allowable Interfering Contour/ Undesired F(50/10) Field Strength Contour**
All classes (Except B and B1)	60 dBu	54 dBu
Class B1	57 dBu	51 dBu
Class B	54 dBu	48 dBu

23. The above chart provides the same protection to full-power FM stations as provided now under current Commission rules for co-channel and first-adjacent channels. Each application for a LPFM license should require an engineering showing that these interference limits are not exceeded to any co-channel or first-adjacent channel station. "All

classes" in the above chart includes protection of the class LP-1000 60 dBu protected contour by full-power FM stations as well as all other LPFM stations. LP-100 stations contours (60 dBu) are protected only by another LP-100 class station. LPFM stations of both classes (LP-1000 and LP-100) must meet the interference standards (undesired) in the above charts relative to all full-power FM stations and protected LP-1000 stations (60 dBu protected contour).

24. **Computer programs currently used by the Commission to predict interference, under the short-spaced FM station rules (Section 73.215), can be used to predict interference in applications for new LPFM stations of all classes. Simply plug in the data from the engineering page of the "first-come first-served" LPFM application to see if the application would cause interference. Thus, processing of a LPFM application by the Commission should require a minimum of time and effort and preserve the same high standards against interference as currently exist.** Per Section 73.215 - "Each application to be processed pursuant to this section must specifically request such processing on its face, and must include the necessary exhibit to demonstrate that the requisite contour protection will be provided. Such applications may be granted when the Commission determines that such action would serve the public interest, convenience, and necessity." Thus, if the Commission possesses the software to process these type applications, then the same software should be capable of processing LPFM application in an expeditious manner. At worst case, the computer program may need modified slightly to deal with the lower power levels involved with LPFM. The increased number of LPFM stations that could be created in major markets, where they are needed most, would offset any costs for modifying this program to work for LPFM, if any modification is needed at all. The costs involved to obtain engineering help in preparing the engineering section of the LPFM application would be small and affordable by even the smallest applicants. Those applicants who believe that there should be no cost to them in preparing and filing their applications do not understand the complexity of the engineering issues involved. I would question the seriousness of providing service from any applicant not willing to invest a small amount in assuring non-interference in his/her LPFM application. While the Commission tried to eliminate the need for engineering help to prepare LPFM applications in the NPRM, the resultant mileage separation tables would result in far fewer LPFM stations in major markets

where they are needed the most. In this case, a little more work by the applicant and the Commission is needed to achieve the desired goal of making LPFM service available to as many as possible. Trying to over-simplify the application process could have the negative effect of severely limiting the number of LPFM stations that might be constructed, especially in major markets where the need is the greatest. I wish to point out a misconception in the NPRM that may have led the Commission to lean towards mileage separation tables. In paragraph-40 of the NPRM, they state "We recognize that an approach based on distance separations could result in fewer LPFM stations and that additional stations could be "squeezed in" if a contour overlap methodology were employed." (*Here, the Commission is agreeing with my approach put forth in these comments. I will now show the flaw in their thinking that will now allow the Commission to support the contour overlap methodology that will allow for many more LPFM stations.)* In paragraph-40 of the NPRM, they continue, "However, as the Commission learned from implementing the low power television service, the contour overlap approach is resource intensive and requires, among other things, substantial preparation in advance of receiving applications, including the writing of complex computer programs and preparation of several data bases." Here is the flaw in that thinking. I know since I participated in the LPTV rulemaking and filed some of the very first applications back in 1980. First, the Commission was forced to log in and enter all the technical information into an engineering database from each and every LPTV application filed (over 17,000 in the first window). This created mutually exclusive daisy-chains affecting hundreds of stations at a time which the FCC had to determine and schedule for lotteries. **I certainly don't blame anyone at the Commission for not wanting to go through that again; however, the "first-come first-served" methodology proposed in these comments differs substantially and would not result in such an exhaustive overload! First, by using a "first-come first-served" method of filing as proposed herein and as used now for non-commercial FM applications, only those applications selected as being "first" need be fully processed. All others can be set aside and once the successful application is granted all other applications can be discarded.** The Commission already has the databases needed to use the "contour prediction" method of processing, including the FM directional antenna database. See file name FMFXDA.DAT.GZ on the FCC online website. The required terrain database and FM stations

database are already there also. All that might be required is to add a few more FM directional antennas from various manufacturers to the directional antenna database from time to time. The FCC could speed processing by insisting that any directional antenna specified in a LPFM application be listed in the FCC FM directional antenna database. By using this first-come first-served methodology, the Commission's workload would be minimal. In this same fashion, since there would be **no mutually exclusive ("MX") applications**, the rules regarding using "auctions" would not be relevant and thus **auctions could be avoided**. Auctions would be counter-productive to the LPFM service since one of the goals is to lower the barrier to entry for applicants of limited financial means, including minority applicants. I can envision applications being filed electronically and the Commission having to fully process only those applications "arriving first" for each channel in each geographical area. The only comparison of applications that would need to be done, besides determining the order in which the applications are filed (date/time stamped), is to make sure that no application about to be granted would conflict or be mutually exclusive ("MX") with an application already granted that arrived earlier in the time-line. Perhaps an application could show the channel number requested and the city of license requested, along with the name of the nearest Metropolitan Statistical Area ("MSA") boldly on the first page, to simplify designating what area the application is for. LP-1000 applications, as primary service applications, could be processed first and then LP-100 applications next. The Commission could publish a list of all MSA's on its website and applicants could determine which MSA was nearest them. This method could speed processing, rather than having to refer to coordinates from each application. Each application received should receive a date/time stamp to determine the exact order of filing for "first-come first-served" status. Knowing the channel, nearest MSA and date/time received, it should be fairly quick work to sort through the applications filed and pick the winners, that would then receive complete processing. If an application was found defective, it could be rejected and the next in time could be processed, until that channel associated with that MSA was granted. In the alternative, if the MSA idea was not feasible for some reason, then the coordinates could be entered from the top few applications from each area of the country. If this were to prove too intensive, then possibly separate filing windows for different sections of the country could be used to lessen the workload at the

Commission. Separate filing windows should be used as a last resort, in my opinion, in order to speed service to the public. Application filing fees should be set so as to be adequate to fund any method of processing chosen.

25. Under this plan second-adjacent and third-adjacent, as well as 10.6 MHZ and 10.8 MHZ intermediate frequency (IF) restrictions are eliminated due to vast improvements in receiver technology since these restrictions were created several decades ago. Current FM-translator rules eliminate the IF restrictions for FM translators under 100 watts (Section 74.1204(g) of the rules). Further discussion of the elimination of these restrictions is discussed above in paragraph-15 in these comments.

26. I believe that although LPFM LP-1000 stations should not cause interference to any primary station, they should be allowed to receive interference from such stations. LP-100 stations also should be allowed to receive interference.

27. In the alternative, if the Commission wishes to simplify the application process while at the same time allowing for the greatest number of LP-1000 stations, especially in the major markets, then it should consider two application forms. Perhaps a "short-form" for small market applicants that can meet the mileage separation tables in the NPRM and a "long-form" for applicants in major markets that cannot meet the distances in the mileage separation tables in the NPRM. Thus, a good number of applicants could benefit from the simplified preparation and processing leaving a much smaller number the availability of filing a "long-form" application when and where needed. This may be the best method.

28. **Support for Technical Considerations**

It is proposed in these comments that the second and third adjacent channel spacing restrictions currently embodied in the rules be eliminated as unduly restrictive and unnecessary for the purpose of implementing this new LPFM service. A discussion of past FCC rules follows which shows that second and third adjacent channel restrictions have been ignored in the past without causing significant interference. With receiver improvements in selectivity in the past many years, and the relatively lower power of the proposed LPFM stations, it serves the public interest that second adjacent channel and third adjacent channel restrictions be discarded for

implementation of this new service. Any small amount of interference, which might occur around the LPFM antenna site, would be offset by the advantage of new service as proposed herein. Significant public interest benefits would flow from adoption of this proposal.

29. In 1962, the Commission began a series of rulemaking actions specifying requirements for the FM broadcast service, including station distance separation requirements. First Report and Order in Docket 14185, 33 FCC 309 (1962). A number of existing stations were operating from transmitter sites that did not comply with the distance separation requirements adopted then, and the Commission grandfathered these as permitted short-spaced stations.

30. In its Third Report, Memorandum Opinion and Order in Docket No. 14185, 40 FCC 747 (1963), the Commission adopted a new FM table of allotments and a channel allocation scheme based on fixed mileage separations between stations on the same FM channel and on three adjacent channels on either side of the particular station's channel. This allotment scheme was applicable to new stations, while the policies governing existing grand fathered short-spaced stations were addressed in the Commission's Fourth Report and Order in Docket No. 14185, 40 FCC 868, 3 RR d. 1571 (1964). (hereinafter referred to as the "Fourth Report and Order").

31. In its Fourth Report and Order, the Commission permitted then-existing co-channel and first adjacent channel short-spaced stations to achieve facilities to the maximum for their class provided that certain maximum mileage separations between stations' transmitter sites were met. However, in the Fourth Report and Order, the Commission treated stations on existing short-spaced second adjacent channels and third adjacent channels differently from the way they treated short-spaced co-channel and first adjacent channel stations. Specifically, the Commission determined that it would permit stations to disregard short-spaced stations on second and third adjacent channels (*emphasis added)* in any applications for improvement of technical facilities. Fourth Report and Order, supra, 40 FCC at 879. In adopting this approach for pre-1964 grand fathered second adjacent channel and third adjacent channel short-spaced FM stations, the Commission noted as follows:

> **"With very few exceptions, all the parties recommend that short-spacings on second and third adjacent channels be disregarded in any proposal which is adopted. It was pointed out that this interference is usually very small, occurs around the transmitter site of the station causing**

the interference, and that in any event the small amounts of interference caused are more than offset usually by the advantages of power increases for all stations..."

Fourth Report and Order, supra, 40 FCC at 879.

As a result of these policies, in its Fourth Report and Order, the Commission adopted, as part of Section 73.213(a) of its Rules, a new table of routinely permissible power and antenna heights limited that applied only to modifications of technical facilities for grandfathered short-spaced co-channel stations and first adjacent channel stations. No restrictions were placed on technical improvements for grandfathered short-spaced stations on second and third adjacent channel stations.

32. Nearly 20 years later in 1983, the Commission adopted a major revision of its FM channel allotment rules but did not modify the Table in Section 73.213(a), which deals with grandfathered short-spaced stations, to accommodate the new classes of FM stations created under BC Docket No. 80-90, namely classes B1, C2 and C3.

33. In 1987, the Commission revised Section 73.213(a)--including the rule change that required consideration of second and third adjacent channel short-spacings in the context of applications for improvement in the technical facilities of grandfathered short-spaced stations. This 1987 revision to Section 73.213(a) of the Rules was premised solely on the basis of the Commission's undocumented and unsupported speculation *(emphasis added)* that improvement of the technical facilities of grandfathered short-spaced second adjacent channel and third adjacent channel stations might increase the "risk" of interference. Unfortunately, the Commission's foregoing conclusions in 1987 were not predicated on any record evidence that improvement in the facilities of grandfathered short-spaced second adjacent channel stations and third adjacent channel stations would, in fact, pose an increased risk of interference to other grandfathered short-spaced second and third adjacent channel stations. Nowhere in the Commission's Second Report and Order in MM Docket No. 86-144, supra, does the Commission make any finding of fact or point to any record evidence in the proceeding that in any way casts the slightest doubt on the validity of the findings of fact and conclusions that the Commission reached in its Fourth Report and Order in Docket No. 14185, with respect to second and third adjacent channel

grandfathered short-spaced stations.

34. In MM Docket No. 96-120 RM-7651, adopted August 4, 1997, the Commission received almost unanimous support in comments from numerous consulting engineering firms and broadcasters for completely disregarding the second adjacent channel and third adjacent channel restrictions for applications from grandfathered short-spaced FM stations seeking to improve their facilities. A sample of the comments and the Commission's conclusion appear below:

General support.

Of the parties providing initial and reply comments on this proposal, most agree that we should completely eliminate second-adjacent and third-adjacent spacing requirements for grandfathered stations. The Joint Petitioners fully support the original Proposal 2, and specifically reject the alternative proposal put forth in Paragraph 26 of the *Notice*. AFCCE supports the original Proposal 2, and states that it is "the most essential part of the simplified procedure." Mullaney supports the original Proposal 2. CTI fully supports Proposal 2, stating that *today's receivers are seldom affected by second-adjacent and third-adjacent channel interference* (emphasis added).

Media-Com, Inc. and Group M Communications, Inc. both support Proposal 2 and state that current second- and third-adjacent channel restrictions have prevented grandfathered stations from improving, or even maintaining existing service areas. Compass Radio of San Diego, Inc. ("Compass") fully supports Proposal 2, stating that adoption would facilitate improvement of station facilities, along with eliminating a significant amount of unnecessary workload on the Commission's staff. *Compass' comments include specific examples of stations that have operated with second-adjacent or third-adjacent overlap, without receiving interference complaints* (emphasis added).

Conclusion.

As the majority of the commenters in this proceeding agree, we believe that reinstatement of the pre-1987 rules regarding second and third-adjacent channel grand fathered stations

would best serve the public interest. We see little advantage to require additional exhibits from grand fathered stations proposing site changes or facility modifications. ***The small risk of interference is far outweighed by the improvement in flexibility and improved service*** **(emphasis added).**

Report and Order MM Docket No. 96-120 RM-7651, adopted by the Commission August 4, 1997 and released August 8, 1997.

35. The NAB filed comments in support of disregarding the second and third adjacent channel restrictions in this proceeding but added a comment that they were concerned about "the possibility that this or a future Commission might modify its overall FM allocations criteria, based on the record in the instant proceeding...". Thus the NAB would have us believe that interference will not occur on second and third adjacent channels, but only for a certain class of stations covered in this proceeding, namely grandfathered short-spaced FM stations. They gave no evidence in their comments in the proceeding supporting this view scientifically. Indeed, the laws of physics relating to second and third adjacent channel interference would be the same regardless of the class of FM station considered. Put simply, a receiver doesn't know the "class" of the FM station it is receiving and will not receive interference based on the station's "class", grandfathered or new. I contend that NAB's comments in this regard are anti-competitive in nature and should not be given weight in this matter.

36. For the reasons stated above, it is requested that only co-channel and first adjacent channels be studied in predicting interference for applications for new LPFM stations.
As has been pointed out, any very small amount of interference that might occur would be around the immediate vicinity of the LPFM transmitter site and based on the low power being used would be a very small area indeed, probably in the neighborhood of a hundred feet or less, if at all.
Clearly the paramount public interest, convenience and necessity is best served by promoting the creation of these LPFM stations, thereby fostering competition and diversification of ownership of mass media. The Supreme Court has long recognized that:

> **"...the Commission has long acted on the theory that diversification of mass media ownership serves the public interest by promoting diversification of program and service viewpoints, as well as by preventing undue concentration of economic power."**

<u>FCC v. National Citizens Committee for Broadcasting</u>, 436 US 775, 780 (1978)

37. It is important, as stated by the Supreme Court above, to prevent an undue concentration of economic power. It has been pointed out in this petition and in numerous trade periodicals that the unprecedented consolidation of ownership that has taken place in the radio industry over the last few years has far reaching negative effects by concentrating this amount of economic power in each market and nationwide. Ad agencies have complained that when one owner controls a half dozen stations or more in a market, they are forced to buy time on some of his other stations that might not normally be desired in order to get ads on the top one or two stations in the market under common ownership. Many small advertisers have stated that since consolidation the rates have increased tremendously to the point where they can no longer afford to advertise on radio in their market. It is this undue concentration of economic power that the Supreme Court referred to above. Implementation of this proposal could go a long way in making affordable radio advertising available to small advertisers once again and increase the diversity in programs and station ownership nationwide. In addition to the benefits to the small business advertisers, the public will benefit from a much larger selection of program material presented by the new LPFM stations. Many minority applicants and those of lesser financial means will benefit by being able for the first time to have a voice in the broadcast medium. Indeed, under the plan put forth in these comments, an applicant can acquire the needed engineering help to file his/her application and build a LPFM station for less than the price of a new car. LPFM will lower the barrier to entry to broadcasting for possibly thousands of new entrants.

38. As of October 1996, according to an estimate included in a NAB filing regarding grandfathered short-spaced FM stations, there were the following number of short-spaced stations and situations grouped as follows:

Short-spaced stations:	Class A	57
	Class B	206
	Class B1	2
	Class C	44
	Class C1	3

	TOTAL	312

Short-spaced situations:	2nd adjacent channel short spacings	322
	3rd adjacent channel short spacings	138

	TOTAL	460

The number of short-spaced-situations exceeds the number of short-spaced stations because a single station can be involved in more than one short-spacing. **This illustrates that many full-power stations have operated for years with short spacings on second and third adjacent channels without complaints of interference.** To argue that second and third adjacent channels need current restrictions is simply not supported by facts, as demonstrated herein and in the MM Docket No. 96-120 RM-7651 proceeding.

39. The public interest standard of the Communications Act includes examination of competitive issues; indeed, the Commission is empowered "to make findings relating to the pertinent antitrust policies, draw conclusions from the findings and weight these conclusions along with other important public interest considerations." U.S. v. FCC, 652 F.d. 72, 81-82 (D.C. Car 1980) (en banc). Competition is a means to an end of maximizing consumer welfare and efficient allocation of resources.

40. If no I.F. restrictions are imposed it would allow a greater number of LPFM stations be built and this fact should be weighed versus any potential for minimal interference in a very small area. The ability to ensure diversification in ownership of media should outweigh any minimal amount of interference that might result from discarding of the I.F. spacing requirements or in the alternative the lessening of same for the LPFM service.

41. **Allocation Table vs. "Filing Windows"**

A series of application filing windows, as used successfully in the Low Power Television (LPTV) service, should work well for a new LPFM service. This method allows channels to be applied for on a demand-basis by applicants, in numbers and areas that best suit the applicants needs. The method of opening of a filing window, normally for a one week period, for new and, later, major-change applications could work well for this service. A problem with an allocation table is that it acts like a magnet to draw competing applications by applicants that may not be as enthusiastic, serious or motivated about the channel as the applicant who went to the trouble to find a usable channel and then apply for it, hopefully uncontested. In this manner, the only way an applicant would face competition for his/her channel would be if another applicant coincidentally happened to file for the same FM channel in the same area. This method would contribute greatly to saving scarce Commission processing resources, since many applicants may be the only applicant (singleton) for a channel during a filing window and may get a quick grant, thus also speeding service to the public. When the Commission used to publish cutoff lists for LPTV channels, it drew far more applications from speculator type applicants who may not be the most qualified to receive the channel. Once the Commission eliminated the cutoff list in favor of the one-week "filing windows", it saw far fewer applications by more qualified applicants, many of which received a channel uncontested and proceeded with rapid construction. Therefore, for the new LPFM service, the Commission should abandon its traditional approach of allocating a channel to a community and then publishing its availability.

42. The demand-based system of filing windows described here has a proven record in the LPTV service and should be used for LPFM as well. Once the filing window closes, the Commission then can publish a Proposed Grant List comprised of applications that are ready to

grant and give the standard 30-day period for petitions to deny. Auctions would not serve a useful purpose, either for the Commission, the applicants or the public. Application fees and annual regulatory fees can be used to pay for the cost of processing the applications and administering the service at the Commission. Mutually exclusive conditions can be avoided by using a "first-come/first-served" system as is used now in the non-commercial FM service. Adequate services are available online and at libraries to allow most everyone the chance to prepare a well-prepared application, free of defects and including a non-interference showing, which the Commission need only verify on the very first application for a channel in a particular area. This would do away with having to process several mutually exclusive applications and would result in a great saving of Commission resources. Thus the huge processing burden that was experienced early on in the LPTV service could be avoided, since only the selected "first come first served" applications need be fully processed.

43. **Application Requirements, Processing and Fees**

In order to assure no interference to existing facilities, each LPFM application should include an engineering showing of no interference to the co-channel and first adjacent channels above and below the channel being studied. This showing/report should illustrate the closest existing or pending stations that need to be protected on the co-channel and first adjacent channels.

44. The Commission could modify FCC Form 346 application to construct a Low Power Television (LPTV) station with only minor changes needed for LPFM use. A real party in interest certification should be included to protect against sham applications trying to use a local resident as a front for another real party in interest that does need meet the other requirements for a LPFM application. Care must be taken to prevent current full-power station owners from using front-applicants, who own no other media, to get a LPFM channel, which they would control. The basic technical questions should include the channel specified, transmitter and rated output, antenna, gain of antenna, directional pattern if any, transmission line and associated line loss, effective radiated power both horizontal and vertical, site coordinates, antenna site vertical plan sketch showing center of radiation above ground level and above mean sea level and other technical information that may be required. Only FCC type-accepted transmitters must be employed to

assure spectral purity.

45. In paragraph-41 of the *NPRM,* the Commission seeks comments on its proposed use of minimum distance separations and states, **"While we prefer the simplicity offered by station separation requirements, we realize there may be advantages to using a more sophisticated interference modelling approach. Possible approaches might include the combination of contour protection and reduced station separations (Section 73.215 of the FM radio rules), the contour protection methods used in the low power television service (Sections 74.704, 74.705 and 74.706), or even more elaborate methods involving a terrain-dependent propagation model, such as the point-to-point model proposed in our radio technical streamlining proceeding. Depending on our initial experience in authorization of LPFM service, should we later consider a more sophisticated and spectrally efficient approach?"** Here the Commission hits the nail on the head when it admits it might wish to consider a "more spectrally efficient approach". By using the "first come-first served" method of processing for LPFM, the workload becomes easily manageable thus allowing the use of both mileage separations for "short-form" applications while allowing those not able to meet the mileage separations the chance to file a "long-form" application with engineering data showing compliance and non-interference using the "contour protection" methods set forth in Section 73.215 of the present FM radio rules. This dual method of processing, including "first come-first served", meets the goal of providing LPFM to the largest possible number of new entrants and should be adopted by the Commission. To do otherwise would delay service to the public and delay opportunities to the new entrants that this service will promote. Such delays could have other negative effects, such as increased operation of illegal "pirate radio" stations by those unable to apply at the same time others across the country apply for their stations. Besides creating additional interference to licensed stations these delays would put an undue burden on the CIB staff of the Commission. Indeed, the more LPFM stations that are licensed, the more eyes and ears the Commission CIB staff would have to protect against unlicensed operations. Thus, it is in the public interest to begin the LPFM service with this dual method of processing, rather than to try to implement the service with only mileage separations and then later add contour protections. Indeed, I look forward to the day, in the not too distant future, when we can organize a LPFM industry trade association,

similar to the Community Broadcasters Association that serves the low power television industry. Such an association of LPFM station owners/operators could go a long way in helping the Commission vastly decrease the level of unlicensed activity, provide input to the Commission for any fine-tuning of LPFM rules in the future and provide a medium of self-help where LPFM operators could turn for advice on a myriad of subjects related to LPFM broadcasting.

B. 100-Watt Secondary Service ("LP-100") Stations

46. I support the creation of a LP-100 class of station to operate as a "secondary-status" facility. I would modify the maximum antenna height in the NPRM for this class of station from 30 meters to 100 meters, the same as I propose for LP-1000 stations. This would increase the distance to the 60 dBu contour from 5.6 kilometers (3.5 miles) with a 30 meter antenna height limit to 10.3 kilometers (6.4 miles) with an antenna height of 100 meters. I can see no good reason for limiting the antenna height above average terrain (HAAT) to 30 meters for a class LP-100 station, especially since it is a "secondary service". I support the minimums of 50 watts at 30 meters antenna height as set forth in the NPRM for class LP-100 stations. LP-100 stations would operate on a secondary basis with respect to all primary radio stations, including LP-1000 class LPFM stations.

47. I do not believe that LP-1000 primary stations should have to protect co-channel or 1st adjacent channels for LP-100 class secondary stations. In many cases, LP-100 stations will be constructed on channels that will not hold a LP-1000 station so there would no threat of displacement from a LP-1000 applicant. In cases where, a licensed and operating LP-100 station is confronted with a LP-1000 applicant who wants his/her channel and has filed a LP-1000 application for it or a first adjacent channel, I believe that the Commission should notify the LP-100 station owner and give him/her sixty days to file for an upgrade of the LP-100 station to LP-1000 status or be bumped by the new applicant. I do not believe there should be any protection for LP-100 applicants from LP-1000 applicants at the first application stage, but only to licensed operating LP-100 stations as explained above. LP-100 stations operating on FM channels 201-220 should also have to protect TV Channel 6 stations in their area.

48. LP-100 stations that originate local programming should be considered primary only

when compared to FM translators or boosters that do not originate local programming. In the alternative, protection might be afforded FM translators that provide a fill-in service of a local station, by LP-100 applicants, provided the FM translator existed before the release of this NPRM (February 3, 1999). No protection should be afforded FM translators that re-broadcast a distant signal, received by satellite or other means. Under no circumstances should LP-100 stations be given primary status in relation to LP-1000 and full-power FM stations. This would preclude the addition of LP-1000 and full-power stations, both new and upgrades.

C. 1-10 Watt Secondary "Microradio" Service

49. After careful consideration and much discussion, I have withdrawn my support for any LPFM stations below 50 watts, the minimum set for class LP-100 secondary service. I believe all serious broadcasters needs can be met by either a LP-100 or LP-1000 class station, where available. I think it would overburden the Commission to consider licensing stations below 100 watts, which are not an efficient means of broadcasting. I understand that many so-called "pirate broadcasters" prefer these lower power levels, but I do not "pirate broadcasting" and I do not believe there is sufficient spectrum to address the wants and needs of what I call "hobby broadcasters", for lack of a better term. Although, in an addendum to my original petition RM-9242, I requested a limited amnesty for some "pirate operators" who jumped the gun and began broadcasting before this proceeding was established, I draw the line and would not give amnesty or allow for application for a LPFM by any "pirate operator" who did not shut down voluntarily when requested to do so by the Commission. Any "pirate operators" operating such a station after the release of this NPRM, should also not be eligible to apply for a LPFM station license. I believe the needs of any prospective LP-10 operator can be met by obtaining a LP-100 license and operating, if they wish, with the minimum 50 watts at 30 meters which would produce a 60 dBu contour to a distance of 2.95 kilometers (1.8 miles). Those wishing to cover less distance than this should consider a legal Part-15 type transmitter/antenna, after first making sure that any such device does indeed comply with Part-15 rules. Regarding "microradio", I can only recite my favorite saying on that subject, "Micro is for breweries, not for broadcasting." Regarding pirate or hobby broadcasters, I wish only to state that, in my opinion, their interests do not coincide

with those of professional broadcasters, who as Commission licensees agree to abide by Commission rules.

D. Dropping of 2nd And 3rd Adjacent Channel Restrictions for LPFM Stations

50. While most parties agree that dropping of the 3rd adjacent channel restrictions would pose no serious interference consequences, there has been some concern about dropping the restrictions for 2nd adjacent channels. In paragraph-38 above in these comments, details are given about the hundreds of full-power FM stations that have been operating on both 2nd and 3rd adjacent channels for years without any interference. These stations were allowed to pick channels without regard to 2nd or 3rd adjacent channel mileage separations as a result of the grandfathered short-spaced FM proceeding. In the Commission's own words, in paragraph-46 of the *NPRM (FCC 99-6),* ***"We previously found in the case of 'grandfathered' short-spaced FM stations, that during the period in which they were able to modify facilities without regard to 2nd- and 3rd-adjacent channel spacing (1964-1987), we did not receive any interference complaints as a result of such modifications. We found only a small risk of interference in that context, which was outweighed by improved service."*** This ,essentially, makes the case for dropping both the 2nd and 3rd adjacent channel restrictions for LPFM! As I have stated throughout this proceeding, if full-power stations (by the hundreds) can operate on 2nd and 3rd adjacent channels without causing interference, then LPFM stations, operating with considerably less power, pose no threat of interference. If any of the receiver tests, which I understand are being performed by some parties, show otherwise, I submit that any such interference would be minimal and would be <u>outweighed</u> by providing new service across the country by hundreds or possibly thousands of new LPFM stations by a like number of new entrants into the field. I am sure one could always find a few poorly designed receivers that would exhibit signs of interference even with current separations, but these would be in the minority and not indicative of the quality of receivers today with ceramic filters to provide better selectivity. I would hope some conducting receiver studies, in conjunction with this proceeding, would not load their studies with these receivers of less than perfect design. Previous receiver tests, done in conjunction with the grandfathered short-spaced

FM proceeding[1], have shown that, in general, automobile receivers are not subject to interference from 2nd and 3rd adjacent channels.

51. While I support the idea of dropping both 2nd- and 3rd-adjacent channel restrictions for LPFM stations, I do not support dropping these restrictions for full-power FM stations. I believe that the relatively low power levels of LPFM stations supports this distinction. I believe that if these same channel restrictions were dropped for full-power FM stations there would be a massive negative effect on LPFM stations seeking channels since the full-power stations would all rush to attempt to "improve" their existing facilities even further. The scarcity of LPFM spectrum under current rules testifies to the aggressive efforts of existing full-power FM broadcasters to maximize service.

52. According to FCC FM rules section 73.215, it is understood that in order for a second or third adjacent channel signal to cause interference it must exceed the signal strength of the protected station by 40 dB according to 73.215 (a)(2):

"For both second and third adjacent channel stations (±400 kHz and +600 kHz), the F(50,10) field strength along the interfering contour is 40 dB higher than the F(50,50) field strength along the protected contour for which overlap is prohibited."

Thus a LPFM station would need a signal in excess of 100 dBu F(50,10) at the protected stations 60 dBu F(50,50) contour in order to interfere with the protected station. Under maximum facilities proposed in these comments for class LP-1000 LPFM stations (1 KW @ 100 meters HAAT), the maximum distance from the LPFM antenna site for a 100 dBu F(50,10) signal is 1.6 kilometers (1 mile). This is a worst case scenario and in most cases the signal strength of the protected full-power FM station would be far in excess of 60 dBu in the vicinity of the LPFM station. For example, if the full-power FM signal was 100 dBu F(50,50) in the vicinity of the LPFM antenna site, which would be quite probable in many cases, then the 2nd or 3rd adjacent channel LPFM would need a signal in excess of 140 dBu F(50,10) to interfere. Under maximum facilities proposed in these comments for class LP-1000 LPFM stations (1 KW @ 100 meters HAAT), the maximum distance from the LPFM antenna site for a 140 dBu F(50,10) signal is .02

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[1] *Report and Order* in MM Docket No. 96-120, 12 FCC Rcd 11840, 11847-49 (1997)(*Grandfathering of Short-Spaced Stations R&O).*

kilometers (.01 mile or 53 feet). Indeed, 53 feet from the LPFM tower can be considered insignificant. Thus, we have shown that the area for "possible" interference can be from a few feet up to one mile for a maximum LPFM facility, as proposed herein. By locating the LPFM station well within the protected contour, 60 dBu F(50,50), of the full-power FM station on the 2nd or 3rd adjacent channel, interference can be minimized to a level that is insignificant, as shown above.

With receiver improvements in selectivity in the past many years, and the relatively lower power of the proposed LPFM stations, it serves the public interest that both second adjacent channel and third adjacent channel restrictions be discarded for implementation of this new service. Any small amount of interference, which might occur around the LPFM antenna site, would be outweighed by the advantage of new service as proposed herein. Significant public interest benefits would flow from adoption of this proposal.

53. The low ERP levels proposed for LPFM stations, together with a tight spectral emission mask for such stations and the proposed requirement to certify transmitters, should significantly reduce the potential for harmful interference to existing service, even if 2nd-adjacent and 3rd-adjacent channel protections are not adopted for the new LPFM service. I support the Commission's idea of requiring transmitter certification to that all LPFM transmitters meet out-of-channel emission limits and other standards related to interference protection of stations on adjacent channels. In this matter the LPFM service can exist while protecting the integrity of the FM band. Ideas previously put forth by others regarding allowing LPFM station operators to build and certify their own transmitters should be rejected. Any additional cost of buying a LPFM transmitter with a tighter than normal emission mask, would be well worth the cost if it meant the difference between having a LPFM service, with 2nd- and 3rd-adjacent channel restrictions dropped, or not. Also earlier ideas put forth about allowing ham radio operators to certify LPFM transmitters is ludicrous and should be dismissed. The FCC transmitter certification requirement makes sense and is needed in this case to allow the LPFM service to exist without causing harmful interference.

54. Although I support a tight emission mask for LPFM transmitters to help reduce interference, I am opposed to reducing the bandwith of LPFM transmitters as mentioned in paragraph-49 of the *NPRM.* I cannot support any measure such as this that would reduce the fidelity of the LPFM signal in comparison to other FM stations. I would prefer to keep sub-carriers as available to other full-power FM stations for LPFM but might consider dropping them, if proven absolutely necessary to aid in preventing interference. I would not support dropping the stereo pilot under any circumstances however.

E. LPFM Co-existing With Digital Audio Broadcasting (DAB) - I.B.O.C.

55. Having read the technical information at the USA Digital Radio ("USADR") website[2] regarding their development of in-band-on-channel digital radio, I come away with the idea that LPFM could operate on 2nd- and 3rd-adjacent channels, as proposed in these comments, with no significant interference to digital stations using I.B.O.C., as described. The creators of I.B.O.C. digital technology have described it as "robust" and able to withstand adjacent channel interference without disruption of the program material. This robust system is described as broadcasting DAB on both upper and lower sidebands such that interference to one sideband is not a problem since the information in the other sideband is identical and can be decoded. They also describe a system to blend with time diversity by delaying the analog signal and blending to analog if the DAB signal is blocked for a short period of time. I think it is fortunate that the digital standard is being developed now so that they can plan for LPFM stations and design their digital system to be robust enough to reject any possible interference from these new LPFM stations operating on 2nd- and 3rd-adjacent channels at the relatively low power levels described herein. Any extra work involved in designing around LPFM is justified and outweighed by the significant number of new voices that can be added to the airwaves as compared to I.B.O.C. which promises us better sound and some other digital feats. I have never found the sound of existing FM stations to need improvement, myself. I find it somewhat interesting that many other countries that are involved in converting their broadcast stations to digital (Europe and Canada for example) have not chosen the in-band-on-channel approach but rather are putting their digital stations into new

[2] http://www.usadr.com/Technical/tech-ibocdab.html

spectrum altogether using the Eureka 147 digital system, with impressive results. I have long thought that the United States would be wise to join this tried and proven method rather than trying to reinvent the wheel, with I.B.O.C. technology. I would go so far as to state that if the companies involved with developing I.B.O.C. cannot make it work given the existence of LPFM stations operating on 2nd- and 3rd-adjacent channels, then those plans should be scrapped and they should seek new spectrum for digital broadcasting. I wish to make the point that the creation of hundreds or thousands of new LPFM stations outweighs the importance of having near-CD quality audio from existing stations. I know the N.A.B. had promoted the Eureka 147 system early on and then withdrew their support when a certain chunk of spectrum (S-band I believe) turned out to not be available for that purpose. There has to be other spectrum that would suffice and they may need to address this issue in the near future, if I.B.O.C. does not perform as expected. Under no circumstances must the Commission let the N.A.B. or others hold LPFM deployment hostage to the possible development of I.B.O.C., since LPFM stands poised ready to provide new service as opposed to an improvement of existing service. The Commission should proceed with the deployment of LPFM stations as rapidly as humanly possible and if I.B.O.C. cannot adjust, then they should seek other spectrum and deploy the proven Eureka 147 digital system.

F. Ownership and Eligibility Requirements

56. The increased opportunity for entry, enhanced diversity and new programs services are the obvious benefits of the LPFM service; however, these benefits could all be erased with ample protections in place to guard against existing broadcasters and large companies scooping up all the available LPFM channels nationwide. We must find ways to keep these new LPFM channels for the new entrants and to keep consolidation from creating the same problems that exist today in the full-power FM station environment. I support the idea of prohibiting existing full-power broadcasters or those with an attributable interest in a full-power station (radio or TV) from being able to apply for a LPFM license. In order to close any loopholes to this approach, there must be a prohibition on any joint sales-agreements, time brokerage agreements, local marketing or management agreements and similar arrangements between full power broadcasters and low

power radio entities. I would also extend this ownership ban to full-power television stations, newspapers both daily and weekly issues and to cable systems located anywhere. The only exceptions I would make to these hard and fast rules would be to allow owners of low power television stations to apply for LPFM stations without divestiture of their LPTV and allow owners of AM stations with night-time power of less than 250 watts, the ability to apply for a LPFM station contingent upon the divestiture of their AM station, within 120 days, in the event they are successful in obtaining a LPFM station license. Under no circumstances should an AM station be allowed to use a LPFM station as a translator or booster by rebroadcasting its signal, as had been proposed by some earlier in this proceeding. In addition to these cross-ownership rules, I support limiting ownership of LPFM stations to "two per community", with the test being that a third LPFM station must not have overlapping 1 mV/m (60 dBu) contours with either of the two LPFM stations under common ownership. I have changed my position on this issue slightly since I feel it may be beneficial in some cases to own *two* LPFM stations to provide a better chance of being able to survive economically in these very competitive times, especially given the level of consolidation now apparent in both large and small markets. I believe these ownership restrictions are absolutely necessary to prevent the new service from being compromised or subsumed by existing full-power broadcasters.

57. While Section 202(b) of the Telecommunications Act of 1996 significantly relaxed the Commission's restrictions on the number of radio stations a licensee could own in individual radio markets, I do not believe this applies to the LPFM service which was not created or even planned when those rules went into effect. I believe the vast difference in power levels and the stated goals of the LPFM service serve to differentiate the LPFM service from the full-power radio service which was the object of those new rules back in 1996. Although I agree that there is some economy of scale in owning multiple facilities nationwide, I do not think that the limits should be removed entirely from the LPFM service. I think a national ownership cap of six LPFM stations, either LP-1000 or LP-100 in any combination, would serve the public interest while preventing some from grabbing as many stations as possible without such a limit. Alien ownership limits that apply to full-power FM stations should also apply to LPFM stations. Character qualifications should likewise apply to LPFM. Any "pirate radio" illegal broadcasters who did not voluntarily

shut down when asked to do so by the Commission or are caught broadcasting without a license after the release date of the instant *NPRM* should be barred from applying for a LPFM license.

G. Service Characteristics

58. I do not think there should be any minimum local origination requirements for the LPFM service. I believe the very local nature of such a service will necessitate that interest is paid to local issues and tastes in programming. LPFM stations should not however be allowed to act as a translator re-broadcasting the signal of any other station including any other LPFM station.

59. It is absolutely imperative that LPFM stations be allowed to operate either as a non-commercial station or as a commercially-supported station. To with hold commercial support would spell the doom of the vast majority of LPFM stations. Stations have used commercial support for over seventy-five years in American broadcasting to support operations and this fine tradition should be allowed to continue with LPFM stations. The ability to sell commercials will also benefit the small businesses in the area of the LPFM station that cannot afford to advertise on the larger full-power FM stations that cover far more than their normal trading area. Since an operator has the 88-92 MHZ portion of the band for non-commercial operation and also can operate as a non-commercial station, if it chooses, in the 92-108 MHZ portion of the band such an operator has more spectrum available than the commercial station which can only operate in the 92-108 MHZ portion of the FM band. There is no reason to limit the LPFM service to non-commercial use only, although this position is being pushed hard by existing broadcasters who see LPFM as a threat to a small portion of their ad revenues. I find it interesting the number of individuals and institutions filing comments recently promoting non-commercial only service, most of whom have not heretofore participated in this proceeding. I suspect that the N.A.B. and others who oppose LPFM, failing to kill the LPFM service entirely are now seeking to weaken it with a non-commercial only status. Such a non-commercial only service would be unable to support its stations, for the most part, and would doom any such service to failure. Commercial support for LPFM stations is an absolute necessity!

60. Public interest programming requirements that apply to other primary stations should likewise apply to primary status LP-1000 class stations. The coverage area within the LP-1000

stations 60 dBu contour could be compared to the full-power stations city of license. Secondary class LP-100 stations should be exempt. Given the power level of LP-1000 stations, I believe that they should be required to comply with the vast majority of rules applicable to full-power stations, with the exception of city grade coverage over the city of license.

61. I see no problem in requiring both LP-1000 and LP-100 stations to comply with the rules and responsibilities under the National Environmental Protection Act, especially relating to protection against exposure to harmful amounts of radiofrequency radiation. I also support the requirement of LP-1000 and LP-100 stations to comply with rules on political programming. I also support the requirement of LP-1000 stations to comply with the same minimum hours of operation that apply to full-power stations. I don't believe LP-100 stations should have minimum hours of operation, except that any station off-the-air for more than ten days must notify the Commission and indicate when they will return to the air and the reasons for being off the air. Stations off the air for more than 30 days, without a suitable excuse, risk having their LPFM station license revoked.

62. The standard 3-year time for construction should apply to LP-1000 LPFM stations while a 12-month construction limit should apply to LP-100 class stations. Section 319(b) of the Communications Act of 1934, as amended, should be enforced on both classes of LPFM stations with regards to enforcing time limits for construction. There should be no restrictions on the sale of a LPFM station from one party to another qualified party that meets the ownership rules stated for new LPFM applicants. Such station sales would require approval of the FCC, with such approval not being unreasonably with held.

63. License terms for LFPM stations, both classes, should be the same as for full-power FM stations and the renewal process a *pro forma* process. There should be no finite length of licenses, as some have proposed. They should be renewable like full-power licenses.

64. LP-1000 and LP-100 stations should be required to abide by the rules regarding the emergency alert system ("EAS").

65. There is no reason to assign specific type callsigns to LP-1000 stations. They should be issued the same four-letter callsigns as full-power stations. LP-100 stations should have a four-letter callsign with an -LPFM suffix, such as WXYZ-LPFM. This would avoid confusion with

LPTV stations with a -LP suffix.

66. All LPFM stations should abide by the inspection rules for full-power stations and must be made available for inspection by Commission representatives at any time during normal business hours or at any time they are in operation.

H. Applications for LPFM Stations

67. I support the idea of requiring electronic filing of LPFM applications to reduce processing and filing time by the Commission. In today's environment a computer is available to anyone, including at public libraries and schools.

68. Trying to over-simplify the application process could have the negative effect of severely limiting the number of LPFM stations that might be constructed, especially in major markets where the need is the greatest. A "first-come first-served" methodology proposed in these comments differs substantially from past methods used in the LPTV service and would not result in such an exhaustive overload! First, by using a "first-come first-served" method of filing as proposed herein and as used now for non-commercial FM applications, only those applications selected as being "first" need be fully processed. All others can be set aside and once the successful application is granted all other applications can be discarded. The Commission already has the databases needed to use the "contour prediction" method of processing, including the FM directional antenna database. See file name FMFXDA.DAT.GZ on the FCC online website. The required terrain database and FM stations database are already there also. All that might be required is to add a few more FM directional antennas from various manufacturers to the directional antenna database from time to time. The FCC could speed processing by insisting that any directional antenna specified in a LPFM application be listed in the FCC FM directional antenna database. By using this first-come first-served methodology, the Commission's workload would be minimal. In this same fashion, since there would be **no mutually exclusive ("MX") applications**, the rules regarding using "auctions" would not be relevant and thus **auctions could be avoided**. Auctions would be counter-productive to the LPFM service since one of the goals is to lower the barrier to entry for applicants of limited financial means, including minority applicants. I can envision applications being filed electronically and the Commission having to

fully process only those applications "arriving first" for each channel in each geographical area. The only comparison of applications that would need to be done, besides determining the order in which the applications are filed (date/time stamped), is to make sure that no application about to be granted would conflict or be mutually exclusive ("MX") with an application already granted that arrived earlier in the time-line. Perhaps an application could show the channel number requested and the city of license requested, along with the name of the nearest Metropolitan Statistical Area ("MSA") boldly on the first page, to simplify designating what area the application is for. LP-1000 applications, as primary service applications, could be processed first and then LP-100 applications next. The Commission could publish a list of all MSA's on its website and applicants could determine which MSA was nearest them. This method could speed processing, rather than having to refer to coordinates from each application. Each application received should receive a date/time stamp to determine the exact order of filing for "first-come first-served" status. Knowing the channel, nearest MSA and date/time received, it should be fairly quick work to sort through the applications filed and pick the winners, that would then receive complete processing. If an application was found defective, it could be rejected and the next in time could be processed, until that channel associated with that MSA was granted. In the alternative, if the MSA idea was not feasible for some reason, then the coordinates could be entered from the top few applications from each area of the country. If this were to prove too intensive, then possibly separate filing windows for different sections of the country could be used to lessen the workload at the Commission. Separate filing windows should be used as a last resort, in my opinion, in order to speed service to the public. Application filing fees should be set so as to be adequate to fund any method of processing chosen. In summary, the Commission should accept LPFM applications on a first-come/first-served basis during application filing windows which should last no more than 24 hours at a time.

Respectfully submitted,

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