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

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

NOTICE OF PROPOSED RULE MAKING

Adopted: January 28, 1999 **Released: February 3, 1999**

Comment Date: April 12, 1999
Reply Comment Date: May 12, 1999

By the Commission: Chairman Kennard and Commissioner Tristani issuing a joint statement; Commissioners Ness and Powell issuing separate statements; and Commissioner Furchtgott-Roth dissenting and issuing a statement.

I. INTRODUCTION

1. By this *Notice*, we are proposing to establish rules authorizing the operation of new, low power FM (LPFM) radio stations. In particular, we are proposing to create two classes of low power radio service, both of which would operate in the existing FM radio band: a 1000-watt primary service and a 100-watt secondary service. We also seek comment on whether to establish a third, "microradio" class of low power radio service that would operate in the range of 1 to 10 watts on a secondary basis. These proposals are in response to two petitions for rule making and related comments indicating substantial interest in, and public support for, increased citizens' access to the airwaves. We believe that these new LPFM stations would provide a low-cost means of serving urban communities and neighborhoods, as well as populations living in smaller rural towns and communities. In creating these new classes of stations, our goals are to address unmet needs for community-oriented radio broadcasting, foster opportunities for new radio broadcast ownership, and promote additional diversity in radio voices and program services. We are proposing that LPFM stations not be subject to certain technical rules currently applied to other classes of radio service. In particular, we believe that current restrictions on third-adjacent channel operations are not needed for LPFM stations, and we believe it may be possible to disregard second-adjacent channel interference for these stations as well. We address below how we may be able to do this. At the same time, we are also proposing new technical rules and geographic spacing requirements to ensure that new LPFM stations do not cause interference to existing full service FM radio stations. In adopting any rules and requirements, we will also be wary of any provisions that would limit the development of future terrestrial digital radio services.[1]

[1] We have begun to receive requests for "experimental" authorizations for low power FM service that essentially would be identical to services now under consideration in this proceeding. We are concerned that many more

2. In this *Notice*, we review formal petitions we have received and the principal arguments of commenters supporting and opposing new low power radio service, and we provide our initial assessment of those arguments. We describe three types of low power service of varying power levels which, in each case or together, could meet local needs. As a general matter, we seek comment on whether any new services established should be operated strictly on a noncommercial basis. The *Notice* also addresses related matters such as service rules, ownership issues, and application processing procedures for LPFM services. We also welcome commenters to bring to our attention any alternatives or additions to our proposals that would serve our goals of encouraging community participation and the proliferation of local voices, while protecting the integrity of the spectrum.

II. BACKGROUND

3. The Commission has sought initial comment on two petitions for rule making requesting the creation of one or more low power radio services.[2] These petitions were filed by J. Rodger Skinner ("Skinner") (RM-9242) and by Nickolaus Leggett, Judith Leggett, and Donald Schellhardt (collectively, "Leggett") (RM 9208).[3] The petitioners state that low power FM would "provide the opportunity for

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individuals and entities may react to this *Notice* by attempting to "jump the gun" by also filing premature applications under the guise of requests for experimental stations. We do not consider it appropriate to prejudge the outcome of this rule making or to begin a premature race for authorizations by considering such requests at this time, and interested parties are advised to await the outcome of this proceeding to file applications pursuant to whatever rules we may establish if we authorize such service. We do not intend to process such applications unless they serve a legitimate and useful specified experimental purpose under controlled conditions for a limited time period appropriate to record experimental results. We also note that experimental broadcasts are not for regular program services and must be conducted on a strictly noncommercial basis. 47 C.F.R. § 74.182.

[2] *Public Notice*, Report No. 2254 (February 5, 1998); and *Public Notice*, Report No. 2261 (March 10, 1998). Other petitions that were filed have been added to the record in this proceeding, have been available for comment, and are considered in this *Notice*. *See, e.g.*, paragraph 0, below (discussing the proposal in the Community Radio Coalition's petition for rule making that low power radio construction permits not be transferable).

[3] Web SportsNet, Inc., later replaced by Gregory D. Deieso ("Deieso"), also submitted a petition which we placed on Public Notice (RM-9246). It proposes the creation of very low power AM or FM "event broadcast stations," which would operate for short periods of time (typically a few days) for the purpose of providing very localized coverage of sporting events or other events to the audience present at the event. A similar service was proposed in part of the Skinner petition. The proposed usage of the facilities and the spectrum rights for such an "event" service are sufficiently different from what is contemplated in establishing an LPFM service in this proceeding, that those issues, and the Deieso petition, are better examined separately from this proceeding. Similarly, the American Community AM Broadcasters Association, Inc. ("ACAMBA") also submitted a petition for rule making, RM-9419, proposing that AM stations be able to use FM translators to fill in their service areas. *See Public Notice*, DA 98-2527 (December 10, 1998). ACAMBA's proposal is not sufficiently related to our instant goals of increasing broadcast diversity, fostering localism, and expanding opportunities for new entrants for it to be considered in this proceeding.

individual citizens and small groups of citizens to operate radio broadcast services,"[4] and "will allow ... people of limited financial means to have a voice in broadcasting in America," envisioning stations owned by area residents and programming focusing on a diverse array of local issues.[5]

A. The Petitions

4. *The Skinner Petition.* Skinner proposes the creation of three classes of LPFM service: (1) a "primary" service class with effective radiated power ("ERP") levels from 50 watts to 3 kW for antenna heights above average terrain ("HAAT") up to 100 meters (328 feet), (2) a "secondary" service class with ERP levels up to 50 watts for HAAT values up to 46 meters (150 feet), and (3) a "special event" service up to 20 watts ERP, for which authorizations would be issued for periods not to exceed ten days.[6]

5. Petitioner avers that primary LPFM stations would meet a need for locally owned "structured" stations that would be responsive to local interests. With the proposed power limits, stations could serve most communities and also clusters of communities and portions of large metropolitan areas. Stations would be authorized on the basis of signal contour interference protection to full power radio and other primary LPFM stations and would not be confined to use of channels in the FM Table of Allotments. Primary LPFM stations would be required to meet the existing desired-to-undesired signal strength ratios at the protected contours of co-channel and first-adjacent channel radio stations of all primary FM classes (20 dB and 6 dB, respectively).[7] The LPFM stations' 60 dBu signal contour, extending out to a maximum of about 24 kilometers (15 miles), would be protected against interference from all classes of FM stations. LPFM licensees would be subject to the "vast majority" of the Part 73 rules applicable to full power FM stations.[8] Station ownership would be restricted to parties living within 80 kilometers (50 miles) of the LPFM antenna site. There would be a limit of three LPFM stations per owner and no party could own more than three stations in a single metropolitan statistical area.

6. Skinner proposes a second LPFM station class for community radio on a smaller scale, with power levels between 1 and 50 watts ERP for antenna heights up to 46 meters (150 feet) HAAT,[9]

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[4] Leggett Petition at 1.

[5] Skinner Petition at 3.

[6] As stated in note **Error! Bookmark not defined.**, above, issues related to "event" radio broadcasting are not considered in this proceeding.

[7] For example, at points along the 60 dBu contour of a Class C station, the field strength of a co-channel LPFM station could not exceed 40 dBu.

[8] Skinner Petition at 63. Skinner indicates that further study would be required to identify Part 73 regulations that could be eliminated for LPFM primary stations.

[9] *Id.* at 10. On one instance in his original petition, Skinner had erroneously given an inconsistent height. *Id.*

producing a coverage radius of five miles or less. Stations in this class would operate on a "secondary" frequency use basis and would be intended to serve very small communities or very small areas within larger communities. Petitioner envisions that such stations would often be operated by community volunteers, who would offer a variety of programs and viewpoints by area residents and that these stations could be started at a minimal cost. Petitioner proposes this as an "interim" class, in that it may be less costly to start a station at this level and upgrade to the higher class LPFM station. Licensees of the secondary LPFM class would have to vacate the channel if a full-power FM station became short-spaced due to an antenna site move or power increase, or if a short-spaced application for the higher class LPFM station were filed. In either event, the station owner would have 60 days to submit its own application to upgrade its facility to the higher LPFM class. This secondary class LPFM station would receive interference protection to its 1 mV/m contour only from other similar stations. These stations would be required to provide contour protection to all higher class FM stations in the manner described above and, evidently, would be subject to the ownership limits proposed for primary LPFM stations.[10] However, the secondary LPFM stations would be subject to fewer regulations: *e.g.*, a transmitter certification requirement, prohibitions against obscene language and advertising gambling, and a "minimal schedule of minimum hours of operation per week."[11]

7. *The Leggett Petition.* Leggett originally proposed a service limited to one watt of transmitter output power and an antenna height of 50 feet. This "microradio" service would broadcast to very small areas in a cellular arrangement, using a single FM and a single AM channel nationwide, thus limiting the impact on existing radio stations. Petitioner believes such stations would have an appeal for "niche markets" and could establish ties over small areas such as rural towns and urban neighborhoods.[12] However, in response to concerns expressed by many of the commenters, Leggett modified its proposal to suggest a two-tiered system.[13] The first tier would include low power radio facilities designed for a maximum transmission radius of one mile. Second-tier stations would have a maximum transmission radius of five miles. Ownership would be limited to individuals whose primary residence is within 25 miles of the station and very small businesses and non-profit entities with primary headquarters located within 25 miles of the station.[14] No licensee would be permitted to own more than five tier-1 or one tier-2 microstations nationwide. Petitioner suggests that microradio stations should be required to operate only a

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at 12. However, he subsequently corrected the inconsistency. Skinner Comments (to Skinner Petition) at 1.

[10] Skinner Petition at 57-59.

[11] *Id*. at 61-62.

[12] Leggett Petition at 1.2.

[13] Leggett Reply Comments at 30, 75.

[14] This proposal would have at least 65% of the station's stock (or other instruments of control) held by entities within the 25-mile radius.

minimum number of hours per year. Licensees would be permitted to build their own transmitters, not subject to Commission approval. Stations would be equipped to enable licensees to monitor the quality of their signal. Licensees would be responsible for proper station operations.

B. Comments

8. Small businesses, community groups, cities, and the hundreds of citizens who commented support the creation of a low power radio service, although not all agree on the parameters of such a service.[15] The petitions are also supported by some small (often AM) broadcasters and by some noncommercial educational radio broadcasters. Petitioners and their supporters argue that consolidation has made radio stations too expensive for most individuals,[16] and that because new voices are being priced out of the market, the public is being deprived of diverse, local voices.[17] They criticize the loss of certain less profitable formats in their listening areas,[18] and they contend that low power radio could serve the needs of small, niche groups, including minority groups (particularly linguistic minorities), that they believe are often ignored by full power stations.[19]

9. The National Association of Broadcasters ("NAB"), National Public Radio, Inc. ("NPR"), other radio broadcaster organizations,[20] and a number of individual licensees oppose the petitions, claiming that existing radio stations are already serving the myriad needs and interests of their communities and

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[15] Some parties addressed the issue by submitting their own petitions for rule making. We are considering such proposals as comments in this proceeding.

[16] A number of these commenters assert that the First Amendment guarantees individuals the right to operate a radio station. They raise no arguments or legal analysis, however, to counter our repeated rejection of this premise, and we will not further discuss it in this *Notice*.

[17] *E.g.*, Representative David E. Bonior Comments at 1-2 (asserting that diverse voices are being priced out of the market); Thomas Acey Reply Comments at 1 (claiming that Newark, New Jersey, stations gave little coverage to local elections held in May, 1998).

[18] *E.g.*, Thomas Desmond Reply Comments at 5-6 (complaining that Philadelphia and Detroit listeners have recently lost their only classical music stations).

[19] *E.g.*, Rosalia Aguilar Comments; Azucena Salazar Comments; Aida Guerrero Comments (stating that Hispanics in the Kansas City, Missouri, area are not served by Spanish-language radio stations); and Baltimore Jewish Radio Comments (expressing an interest in broadcasting otherwise locally unavailable 12 ethnic music and language classes, and stating that purchasing time on full power radio stations is prohibitively expensive).

[20] *E.g.*, State Broadcasters Associations (43 states, the District of Columbia, and Puerto Rico) and the Portland Area Radio Council.

must do so in order to remain competitive, thus making low power radio unnecessary.[21] According to some of these opponents, the Commission's diversity concerns are more appropriately addressed through the ownership rules than by creating a new service.[22] Several opponents of the petitions also take issue with the supporters who decry the effects of consolidation, contending that group ownership can foster important services to listeners because it allows for more efficient operations. NAB adds that there is no indication that the diversity of station *formats* is decreasing.[23] NPR claims that there is no evidence that small geographic areas in fact have sufficiently common programming interests such that the desired niche programming will develop.[24] Finally, a number of opponents of the petitions assert that the range of options for the future development of terrestrial digital radio would be unduly limited by the addition of numerous new facilities operating on the FM band.[25]

III. SERVICE PROPOSALS AND ISSUE ANALYSIS

A. Need for Low Power Radio Service

10. As discussed in our 1998 Biennial Review of broadcast ownership regulations, liberalization of our local radio ownership rules over the past few years has led to increasing ownership consolidation. *See Notice of Inquiry* in MM Docket No. 98-35, 13 FCC Rcd 11276, 11281-83 (1998) ("*Biennial Review*"). The Commission has acknowledged the benefits to the public that may accrue from the economies of scale made possible by group station ownership. However, we are concerned that consolidation may have a significant impact on small broadcasters and potential new entrants into the radio broadcasting business by driving up station prices, thereby exacerbating the difficulty of entering the broadcast industry and of surviving as an independent operator.

11. Additionally, the Commission received over 13,000 inquiries in the last year from individuals and groups showing an interest in starting a low power radio station.[26] Furthermore, as noted above, hundreds of commenters have urged the Commission to create opportunities for low power, locally oriented radio service. These demonstrations of interest in low power radio service indicate that new classifications

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[21] *E.g.*, NAB Comments at 25-26; Tri County Radio Corporation Comments at 2.

[22] ACAMBA Reply Comments at 5; Midwest Dimension Comments at 1. Midwest Dimension is the licensee of stations WPKR(FM), Omro, Wisconsin, and WPCK, Kaukauna, Wisconsin.

[23] NAB Comments at 25-26.

[24] NPR Statement at 9.

[25] *E.g.*, NAB Comments at 13-25; NPR Statement at 7; and Greater Media, Inc. Comments at 5.

[26] For example, the low power radio fact sheet on the Commission's World Wide Web site is averaging more than 1,000 "hits" each month.

of service could be outlets for new voices and program services to serve the public. Moreover, it appears that the variety of demands may best be met by more than one station type, as urged by many commenters. For example, a low power station could be designed to operate similar to a full-power station but on a smaller scale, as a service for an ethnic community dispersed throughout an entire city, as a supplementary commercial or noncommercial service, or simply as a low cost community service used principally to convey information to listeners, without concern for financial support.

12. Accordingly, we seek comment on whether a low power radio service 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 geographically compact areas. Numerous commenters state that alternative sources of information and entertainment are not readily available to dissatisfied speakers and listeners through the acquisition of an existing frequency, leased time from full power stations, an internet website,[27] or internet webcasting,[28] the last three of which do not require a license.[29] Commenters note that the first alternative is too restrictive and provides insufficient access and control to the speaker to meet the demand that has spawned this rule making proceeding. The consistent demand for various forms of low power radio stations, including microradio stations, indicates that many people interested in community broadcasting cannot afford either their own full power stations or whatever limited access to established stations may be available. Moreover, people with non-mainstream interests or unconventional views would have access to the airwaves only with the consent of a full power station owner, which could severely limit their range of expression. We recognize that the internet offers unprecedented opportunities to communicate inexpensively to others around the world and to receive information or programming of interest. However, at this time, internet access is not sufficiently mobile and ubiquitous to be considered a substitute for radio broadcasting's capability to reach the public, despite some opponents' contentions to the contrary.[30] Thus, it appears that low power radio offers opportunities to potential broadcasters and listeners for which there are currently no comparable alternatives. Commenters are invited to address these issues.

13. The technical parameters and other regulations for a particular service could affect not only the availability of frequencies for such stations, but also the nature of the licensees and listeners attracted to different types of stations and the resulting service. A higher power LPFM class with a larger service area would be more likely to attract more listeners, including listeners in vehicles, who account for a significant

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[27] Greater Media, Inc. Comments at 7.

[28] *Id*. at 7; Press Comments at 8.

[29] An example of broadcast radio programming made available over the internet is < www.airos.org >: The American Indian Radio on Satellite (AIROS) network is a national distribution system for Native programming to Tribal communities and to general audiences through Native American and other public radio stations as well as the internet.

[30] Press Comments at 8.

segment of the listeners of full power radio stations. Authorizing these as primary stations could provide stability that could enable licensees to obtain necessary funding to equip stations of this size and operate them in a manner that could more effectively serve the community; for example, perhaps a station could secure the resources to provide live coverage of high school sporting events or local civic or community meetings or events. At the same time, with a relatively small operating budget and a relatively small coverage area, such LPFM stations might be able to offer very localized exposure attractive to local businesses that could not otherwise afford radio advertising.

14. A lower power, less costly class of LPFM station, with secondary frequency use status and fewer operating and other regulatory requirements than full service broadcasters, might appeal to operators desiring to broadcast to smaller nonmobile audiences, especially if operated at locales where there would be little likelihood of channel displacement. As Skinner notes, such stations could often be operated by local volunteers. In some cases, stations might not be able to operate on a full-time basis or according to a regular schedule, but might still offer "niche" programming and important community event coverage and news and weather bulletins, such as school closing announcements.

B. Spectrum Considerations

15. *New Spectrum Allocation*. As an initial matter, we do not intend to create a low power radio service on any spectrum beyond that which is currently allocated for FM use and, as described below, we do not propose to use the AM band. To allocate spectrum not currently used for broadcasting would force consumers to purchase new equipment to gain the benefits of the new service, which would likely have a substantial dampening effect on its success.

16. *Channels for Low Power Radio*. Although it might be desirable to locate the new low power services on a small number of particular channels, with more than 7,000 stations now licensed on the 100 FM channels, it does not appear possible to designate a particular FM frequency or frequencies for one or more low power services (as proposed in the Leggett Petition). No single frequency is available that would protect existing radio service throughout the country. There also does not appear to be any larger segment of the FM spectrum that is generally more available for LPFM operation and to which we could accordingly restrict low power radio service, but we request comment on this assessment.

17. We propose to add any new low power radio services in the FM band only. We do not favor authorizing low power radio use in the AM radio band, as suggested by some commenters.[31] The interference potential and present congestion in the AM band, where many stations currently experience significant interference and degraded reception, make it a poor choice for a new radio service. The propagation characteristics of AM signals could exacerbate the interference potential of low power stations, causing signals to extend long distances, particularly at night. Indeed, because of the congestion in the AM band and the serious problems of both daytime and nighttime interference affecting many stations, the Commission expanded the AM band in 1991 to provide for the migration of stations to the new segment of the band in order to reduce the congestion and resulting interference in the AM radio band.

[31] *See, e.g.*, Trident Media and Broadcasting, Ltd. Petition for Rule Making.

Report and Order in MM Docket No. 87-267, 6 FCC Rcd 6273 (1991) (subsequent history omitted). We believe that introducing low power stations into any part of the AM spectrum would have a serious negative impact on our efforts to improve the quality of reception in this band. We seek comment on these positions.

18. The FM radio band, 88-108 MHz, is divided into 100 "channels" of 200 kHz each. For convenient reference, these channels are given numerical designations which range from 201-300. Section 73.501 of our rules, 47 C.F.R. § 73.501, currently restricts the use of FM channels 201-220 (88-92 MHz) to noncommercial educational broadcasting. Pursuant to Section 73.503(a) of our rules, 47 C.F.R. § 73.503, a noncommercial educational FM broadcast station will be licensed only to a nonprofit educational organization and upon showing that the station will be used for the broadcast of noncommercial educational programming. Accordingly, absent a change in our rules, only those noncommercial entities that meet these requirements would be eligible to apply for and operate LPFM stations in this part of the band, and all operations would have to be strictly noncommercial.

19. Since Congress' first direction to the Commission to study the need for a noncommercial service[32] through several statutory requirements which contemplate noncommercial educational broadcast service, [33] it appears that Congress is concerned with the opportunity for and continuation of noncommercial educational broadcast service. The Commission has also steadfastly preserved this important service.[34] In considering new classes of FM radio service, we are inclined, at a minimum, to continue the noncommercial educational channel reservation with respect to any new stations that would have a preclusive effect on the operation of full power stations in the reserved band, such as the primary

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[32] In the Communications Act of 1934, Congress ordered the Commission to "study the proposal that Congress by statute allocate fixed percentages of radio broadcasting facilities to particular types or kinds of non-profit radio programs or to persons associated with particular types or kinds of non-profit activities" and report its recommendations to Congress. *See* 47 U.S.C. §307(c) (1934).

[33] Part IV, Subpart A of the Communications Act of 1934, as amended, sets forth a number of provisions intended to provide assistance to noncommercial telecommunications entities, including broadcasters. One of Congress's stated goals is to "strengthen the capacity of existing public television and radio stations to provide public telecommunications services to the public." 47 C.F.R. § 390(3). For example, Congress has authorized the Commerce Department to make financial grants for the construction of public broadcast stations. 47 C.F.R. § 392(a). Also, in creating the Corporation for Public Broadcasting in Subpart D of Part IV, Congress found that "it is in the public interest to encourage the growth and development of public radio and television broadcasting, including the use of such media for instructional, educational, and cultural purposes." 47 C.F.R. § 396(a)(1).

[34] *See, e.g., Notice of Proposed Rule Making* in MM Docket No. 98-203, 63 Fed. Reg. 68722 (December 14, 1998) (in which the Commission, recognizing the importance of noncommercial educational broadcasting, has requested comment on whether to impose limits on activities undertaken by noncommercial educational television licensees on the excess capacity of their digital television signal); *see also Amendments to the Television Table of Assignments to Change Noncommercial Educational Reservations*, 58 RR 2d 1455 (1986), *petition for recon. denied*, 3 FCC Rcd. 2517 (1988) (allowing the licensees of a commercial and of a noncommercial channel within the same band and serving substantially the same area to exchange their channels to help preserve educational broadcasting in the wake of decreased federal funding).

low power stations discussed below. We seek comment on this determination. Commenters should address any statutory limitation on our discretion in this regard. We also seek comment on whether we must as a matter of law or should as a matter of policy extend a parallel reservation to any secondary low power or microradio stations that we might authorize on channels 201-220. Commenters should also address whether all low power (and microradio) services should be limited to noncommercial operation, and whether eligibility should correspondingly be restricted to those who would qualify as noncommercial licensees under our current rules. We also ask whether there are potential applicants for the proposed secondary low power and microradio services being considered that could meet the strict eligibility criteria that pertain to the existing noncommercial educational broadcasters.

20. We contemplate that some low power radio stations, like other radio broadcast stations, would want to use auxiliary broadcast frequencies, where available (for example, for studio-to-transmitter links and transmission of remote broadcasts). While use of auxiliary frequencies may not be necessary for very low power stations with limited range, their use might be essential for a larger LPFM class of station. We seek comment on whether all LPFM stations, whether primary or secondary stations, should be permitted to seek authority to use radio broadcast auxiliary frequencies.

21. *Spectrum Priority*. Interference protection is a critical issue that could have a potentially significant effect on where we can institute LPFM service and on the number of LPFM facilities that could be authorized, as well as on the extent to which the introduction of such stations could affect existing broadcasters' ability to modify their facilities. Ensuring the effective and efficient use of the spectrum is one of the fundamental responsibilities of the Commission. *See* 47 U.S.C. §§ 151, 303(f) and (g). We must decide whether LPFM services, if authorized, would provide and receive interference protection with respect not only to existing, but also to future full-service radio facilities and the effects of such requirements on both the LPFM or microradio service and on existing broadcasters. Whether an LPFM service has "primary" or "secondary" status with respect to other FM and LPFM services would affect where LPFM stations could operate, the stability of their operations, and the effect they would have on the introduction of new full-service FM stations and improvements to existing stations. In the next section, we propose both a primary LPFM service and a secondary LPFM service to operate at lower power levels. Commenters should carefully consider the effects of these spectrum priority classifications for each new service.

C. Technical Overview of LPFM Services

22. We are tentatively persuaded that the different visions and service demands for low power radio could not be well accommodated by a single class of LPFM service. Therefore, we propose two distinct classes of service: (1) a primary LPFM service class with an ERP limit of 1,000 watts (designated "LP1000") and (2) a secondary class with an ERP limit of 100 watts (designated "LP100"). We also seek comment on the advisability of establishing a very low power secondary "microradio" service with ERP limit of one to ten watts. We first give a technical overview of these services and then focus on key technical and nontechnical issues for the proposed LPFM services.

1. 1000-Watt Primary Service ("LP1000")

23. We propose LP1000 stations that would operate at a maximum effective radiated power

("ERP") of 1000 watts at an antenna height above average terrain ("HAAT") of 60 meters (197 feet).[35] In order to give station operators maximum flexibility to make use of available sites consistent with our interference protection criteria, we do not propose a minimum HAAT. These appear to be reasonable limits for such a service. We propose to protect the 1 mV/m (60 dBu) signal contour of LP1000 stations operating at the maximum ERP and HAAT levels. The minimum separation distances to other stations would be derived on this basis. We note that 60 dBu is the protected contour for Class A stations, the next highest class of FM station. We believe this value would work well with the proposed power and height limits and provides a reasonable compromise between the size of LP1000 service areas and the preclusion of other radio services. For example, an LP1000 station would preclude authorization of another LP1000 station on the same channel within 65 kilometers (40 miles). *See* Appendix B.

24. The proposed power/height combination would produce a 60 dBu signal contour at a distance of 14.2 kilometers (8.8 miles) from the station, or approximately one half the distance to the protected 60 dBu contour of a Class A station using maximum facilities.[36] Such a service contour could cover a significant portion of many urban or suburban areas, and most medium-size or small rural communities. Depending on population density, terrain and other relevant factors, such a station could reach a substantial number of listeners. We seek comment on whether this service should be restricted to noncommercial applicants, open to commercial service, or both. We also seek comment on whether the population in these service areas could be large enough to sustain an advertising base.

25. A signal range of more than 8 miles should enable service to mobile listeners and to people living on farms or ranches in the vicinity of small rural communities. However, we ask whether the type of service envisioned for LP1000 stations could be met with lower power levels and/or antenna heights. We do not believe that a higher power or antenna height, such as the 3000 watt/100 meter limit proposed by Skinner, which surpasses many current radio facilities, would be necessary to achieve the goals we have set forth. We are concerned that the greater interference protection requirements for stations operating at Skinner's proposed power and height limits would sharply restrict opportunities for new stations in most mid-sized and larger markets. The need for larger facilities could be met by Class A FM stations, which operate at ERP levels up to 6 kilowatts. Thus, the upper limits of 1000 watts and 60 meters are being proposed because, we believe, they represent a good compromise between achieving a moderate service area and permitting reasonably closely spaced LP1000 stations on the same or adjacent channels. We note that a 60 meter antenna height would not require FAA clearance at many locations. This height should also be likely to provide a clear signal path within many areas to be served. We seek comment on the above parameters and assumptions, as well as on any reasonable alternatives.

26. In paragraph 0, below, we propose minimum distance separations between stations as

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[35] Antenna heights greater than 60 meters HAAT would be permitted, but an appropriate downward adjustment in ERP would have to be made such that the 1 mV/m F(50,50) signal contour radius would not exceed 14.2 kilometers.

[36] A Class A FM station may operate with an ERP up to 6 kilowatts at an HAAT of 100 meters (328 feet), which produces a 60 dBu contour at a distance of 28 kilometers (17.4 miles). 47 C.F.R. § 73.211(b).

interference protection criteria for LPFM stations. These separations would be based on LPFM stations operating at their maximum permitted ERP and HAAT. Thus, LPFM stations operating below the maximum levels would preclude other FM service on the basis of the upper ERP and HAAT limits. While we believe LPFM stations should have some flexibility to operate below maximum levels, we believe there should also be a lower ERP limit in the interest of efficient use of the radio spectrum. For this purpose, we propose a minimum ERP of 500 watts which, with a HAAT of 60 meters, would produce a 60 dBu service contour at a distance of 12 kilometers (7.5 miles). We do not propose a minimum value for HAAT. Applicants seeking to operate smaller facilities could apply for LP100 stations. We invite comment on the issue of minimum power and height levels of LP1000 stations and whether different levels would be more appropriate either in general, or in specific circumstances such as to meet distance separation requirements or in order to accommodate a negotiated settlement agreement.

27. Primary stations[37] operating in the FM service are required to protect all other primary stations.[38] We propose to extend such primary status to LP1000 stations, which we believe could strengthen this class's ability to serve as an entry-level radio service. Because LP1000 stations would cost more to construct and operate than LP100 stations, secondary status might discourage potential new entrants from investing their time and money into this service, thereby frustrating its purpose.

28. These stations would operate under the majority of the service rules and obligations applicable to primary stations generally. We note that LP1000 stations would have a maximum service area more than six times larger than LP100 stations and, as just noted, would be more expensive to construct and operate. As primary stations, LP1000 stations would be required to give and receive co-channel, first-adjacent channel, and IF interference protection equivalent to the protection levels other primary FM stations provide each other.[39] Likewise, new and modified facilities of existing classes of FM

[37] Noncommercial Class D, FM translator, and FM booster stations are "secondary" services, which "primary" stations are not required to protect.

[38] Nonreserved band protection requirements may be based either on distance separations or on a combination of distance and contour-based restrictions. Noncommercial educational stations in the reserved band rely solely on a signal strength contour methodology. *See* 47 C.F.R. §§ 73.207, 73.209, 73.213, 73.215 and 73.509 and the discussion of FM interference protection requirements in Appendix A.

[39] All LP1000 stations would receive interference protection, and would provide interference protection based on the assumption of maximum facilities (1000 watts, 60 meters HAAT) at the station, irrespective of the actual facilities used, just as is done for all current classes of commercial FM stations. Required minimum station separations would be based on the desired-to-undesired signal strength ratios used to determine protection to other radio classes; e.g. 20 dB protection for co-channel and 6 dB for 1st-adjacent channel stations. As addressed in paragraphs 0-0, below, we are proposing not to require LP1000 stations to give, or receive, 3rd-adjacent channel interference protection to or from any class of FM radio station, and we seek comments on the need for 2nd-adjacent channel protection requirements. Nevertheless, to guide commenters, we include in Appendix B the equivalent minimum separation distances for LPFM protection to stations authorized on 2nd- and 3rd-adjacent channels. Stations operating on channels 201-220 would be required to protect TV Channel 6. *See* 47 C.F.C. § 73.525.

stations would be required to give co-channel, first-adjacent channel, and IF interference protection to LP1000 stations equivalent to the protection that they provide to each other. The extent of interference protection to and from LP1000 stations would be based entirely on minimum station separation requirements, at least during the initial implementation of the LPFM services.[40] We propose that LP1000 stations protect other LP1000 stations on the same channel and first-adjacent channel, and we invite comment on whether these stations should have to protect each other's IF frequencies; *i.e.*, for FM channels separated by 53 or 54 channels.[41]

29. We invite comment on our proposals to create an LP1000 class and afford it primary frequency use status. Commenters should consider the desirability of such a service as well as its potential impact on other FM service classes. We are also concerned whether an LP1000 service would limit or impair the ability of full power stations to implement digital transmission technology such as in-band-on-channel ("IBOC") conversion. As further discussed at paragraph 0, below, we seek comment on this concern. We also seek comment on the impact of affording LP1000 stations primary status against secondary FM translator and booster stations.[42] In what manner should these stations protect LP1000 stations? Should the current scheme for translator and booster protection of FM stations be extended to protect LP1000 stations?[43] Should FM translator and booster service pre-dating the launch of an LP1000 service receive "grandfathered" interference protection from LP1000 stations? We also seek comment on whether to prohibit the establishment of any translator or booster stations for use in conjunction with LP1000 stations, given our desire to maximize ownership and service opportunities for locally owned LPFM stations.

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[40] We are not proposing to accept "short-spaced" LP1000 applications requiring case-by-case analysis and review. Such labor-intensive applications, the number of which could be quite large, would undermine our processing efforts and the simplicity essential for a service intended to be readily accessible to the widest segment of the public. We believe that the public interest would be best served by an efficient and expeditious licensing process based on straightforward distance separation requirements.

[41] Station separations requirements for stations operating on channels that are 53 or 54 channels apart are intended to control intermodulation interference caused by the mixing of signals in a receiver that produce counterfeit signals falling on the receiver's intermediate frequency. These separations are premised on non-overlapping 36 mV/m contours of the stations whose signals could mix together to cause interference.

[42] FM translator stations are secondary stations which receive the signals of primary FM stations and rebroadcast the FM programming on a different channel. FM boosters rebroadcast FM primary signals on the same channel. 47.C.F.R. § 74.1201.

[43] FM translator or booster stations are generally not permitted to cause interference to the reception of regularly used signals of authorized radio broadcast stations. 47 C.F.R. § 74.1203. Applications for FM translator stations are not accepted for filing if the proposed facilities would result in prohibited overlap of their specified field strength contours and the protected contours of authorized FM radio stations. Interference protections are afforded to co-channel stations and stations on the 1st-, 2nd-, and 3rd-adjacent channels and IF channels; *i.e.*, channels separated by 53 or 54 channels from that of an FM radio station. 47 C.F.R. § 74.1204.

2. 100-Watt Secondary Service ("LP100")

30. The 100-watt class would be intended to meet the demand of people who would like to broadcast affordably to communities of moderate size (whether standing alone in rural areas or as part of a larger urban area). We propose to establish an LP100 service to permit stations to operate as a secondary service at maximum facilities of 100 watts ERP and 30 meters (98 feet) HAAT.[44] This combination would produce a 1 mV/m (60 dBu) signal contour at a distance of 5.6 kilometers (3.5 miles) from the station. Depending on population density, an LP100 station might serve from a few hundred to several thousand listeners. We note that these parameters would produce roughly equivalent coverage area to the parameters proposed by Skinner for a similar service (50 watts ERP at 150 feet HAAT). We believe that our proposed limits would facilitate more economical station construction, and we seek comment on this view. We propose a minimum LP100 ERP of 50 watts which, with an HAAT of 30 meters, would produce a 60 dBu signal contour at a distance of 4.8 kilometers (3 miles) from the station. As with LP1000 stations, we do not propose a minimum HAAT for LP100 stations. This is in order to give station operators maximum flexibility to make use of available sites consistent with our interference protection criteria. We invite comment on all of these power and height values. Are the resulting coverage areas appropriate, or would alternative levels for power or height be more suitable for the envisioned purposes of this LPFM service class? Should this service be restricted to noncommercial applicants, open to commercial service, or both? Should there be a different lower power limit for this service, such as 30 watts? We also propose lesser operating and service requirements, *see* Section G., below, to compensate for the more limited service area of LP100 stations. We invite comment on these and other options to promote an affordable community broadcasting service.

31. We propose that LP100 stations would operate on a secondary basis with respect to all primary radio stations, including LP1000 stations. They would not be permitted to cause interference within the protected service contours of existing and future primary stations, nor would they be protected from interference from these stations. LP100 stations would provide co-channel, first-adjacent channel, and IF interference protection to the existing FM station classes, and co-channel and first-adjacent channel protection to LP1000 stations.[45] We invite comment on whether LP100 stations should also provide IF protection to LP1000 stations. In paragraphs 0-0, below, we seek comment on our proposal not to require LPFM stations to provide 3rd-adjacent channel protection, as well as whether such stations should be required to provide second-adjacent channel protection or to receive such protection. By proposing secondary status for LP100 stations, we believe we could authorize more of these stations with less impact on primary broadcast services. In this regard, efforts of full service radio stations to relocate and/or

[44] Antenna heights greater than 30 meters HAAT would be permitted, but an appropriate downward adjustment in ERP watts would have to be made such that the 1 mV/m F(50,50) signal contour radius would not exceed 5.6 kilometers.

[45] The protection provided by LP100 stations would assume the use of maximum (100 watts, 30 meters HAAT) facilities, even if lesser facilities are used. LP100 stations operating on channels 201-220 would also have to protect TV Channel 6 (see 47 C.F.R. § 73.525).

upgrade their facilities would not be curtailed by the need to protect much smaller facilities. If LP100 stations were primary, for example, a Class C FM station using maximum power and antenna height would have to protect all co-channel LP100 stations within a distance of 126.5 miles.[46] However, there may be situations in which secondary LP100 stations might not be concerned about being forced either to cease broadcasts or relocate to a different channel as a result of technical changes to a nearby primary station. For example, in some of the more congested areas, higher power FM stations may possibly be unable to upgrade their facilities to a higher class, due to the need to protect nearby full power stations. In these situations, LP100 stations could fill the "gaps" between gridlocked full power stations. In the less congested areas of the country, we would expect that displaced LP100 stations could more readily be relocated to alternate frequencies.

32. We seek comment on our proposal that LP100 stations be afforded a lower spectrum use priority than LP1000 stations. LP1000 stations would serve larger areas, be more expensive to build and operate, and would be subject to many of regulations applicable to primary FM services. New LP100 stations would be required to protect existing LP1000 stations. We seek comment on whether new LP1000 stations should be required to protect existing co-channel and 1st-adjacent channel LP100 stations. If such protection were not required, LP100 service could be disrupted, which might discourage operation of these stations. In commenting on this issue, commenters should address the likely cost differences between LP1000 and LP100 stations, including costs of station construction and operation. Commenters should also consider the costs of complying with the additional regulations that would apply to LP1000 stations (*see* the discussion of LPFM service rules in Section G., below). We also seek comment on whether LP100 stations should be permitted to select channels without regard to interference received from other stations. Preliminary staff analysis suggests that many more LP100 stations could operate if these stations were permitted to apply for channels for which up to 10% of the area within the 60 dBu contour would be predicted to receive interference.[47]

33. We tentatively conclude that the proposed LP100 secondary service would serve the public interest. We invite comment on our technical proposals for this service, including power and antenna height limits and the secondary status of the service. As further discussed in paragraph 0, below, we seek comment on the effect, if any, of an LP100 service on full power operations and their eventual digital conversion. We also seek comment on the likely impact of LP100 stations on FM translator and booster stations. Should LP100 stations be authorized on an equal basis with FM translators and boosters, since

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[46] A Class C station using maximum power and antenna height has a co-channel interference contour (0.1 mV/m) with a radius of 198 kilometers (123 miles), and would thus have to protect all co-channel LP100 station coverage contours within that distance. LP100 coverage contours would extend 3.5 miles from their station sites. Given the likelihood that large numbers of LP100 stations would be operated, modifications to Class C stations, as well as all other existing station classes, would become extremely difficult, if not impossible, if they were required to provide interference protection to LP100 stations.

[47] In 1st-adjacent and co-channel situations, the interfering contour extends significantly farther than the protected contour. Therefore, an LP100 station could provide protection to a full service station's protected contour and still receive significant amounts of interference.

both would be secondary services, or should LP100 stations be primary with respect to FM translators and boosters, which do not originate programming? If FM translators are treated as a secondary service *vis a vis* LP100 stations, should we provide "grandfathered" interference protection to translator and booster service existing before our adoption of the LP100 radio class? To promote localism, should we prohibit translator or booster rebroadcasts of the programming of LP100 stations?

3. 1-10 Watt Secondary "Microradio" Service

34. We seek comment on the creation of a third class of LPFM service, which would be intended to allow an individual or group of people with very limited means to construct a broadcast facility and permit them to reach listeners within the confines of a very localized setting. This service would operate with a maximum antenna height of 30 meters HAAT (and no minimum HAAT) and ERP levels in the range of one to ten watts. These values would produce a 1 mV/m (60 dBu) signal contour at distances of about 1.8 kilometers to 3.2 kilometers (1-2 miles), depending on the ERP level. This class would be similar to that proposed in the Leggett petition, except that it would not be limited to a single designated channel. Clearly, microstations would offer only very limited coverage, such as for schools, small neighborhoods, subdivisions, or town centers. We seek comment on whether such facilities could satisfy some of the demand that has been expressed for very inexpensive community radio services, particularly in places where LP100 stations could not be located due to interference concerns or financial constraints. Construction costs for such a broadcasting apparatus could be quite low, potentially in the hundreds of dollars for some facilities. We seek comment on whether such a class of service should be restricted to noncommercial applicants, open to commercial service, or both.

35. If we adopt a microradio service, we believe there should be an FCC transmitter certification requirement. We are vitally concerned that such stations meet transmitter out-of-channel emission limits and other standards related to interference protection of stations on adjacent channels. We note that uncertified equipment has on numerous occasions caused dangerous interference to aviation frequencies.[48] We do not believe that a certification requirement would overly burden small operators, given the recent streamlining of our certification procedures.[49] We seek comments on this proposal, including not only burdens of compliance, but specific harms that could result from not requiring transmitter certification.

36. If we were to establish a microradio class, we would envision it as being secondary to all other FM radio services, including LP100 stations. Microradio stations would be required to protect all existing and future primary stations against co-channel and 1st-adjacent channel interference, as well as FM translator and boosters, and would not receive protection from these stations. Interference protection to these services would be based on minimum distance separations. We expect that many microstations could be located on this basis.[50] While a single station operating from 1 to 10 watts ERP may not pose a

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[48] *See, e.g.*, para. 0, below.

[49] *See Report and Order* in Gen Docket No. 98-68, FCC 98-338 (released Dec. 23, 1998) (*Equipment Authorization Streamlining R&O*).

[50] One-watt microstations would have a co-channel interference contour (0.1 mV/m, based on a protection ratio of

serious threat for 2nd- or 3rd-adjacent channel or IF interference, where the interference range might extend only a few hundred feet, we are concerned about uncertain effects of the combined interference potential of possibly many such stations operating on the same channel in the same general area, and we seek comment in this regard. We also seek comment on the extent to which a very low power service would adversely affect full power stations in their current operations or eventual transition to digital.[51]

37. We invite comment on the merits of a very low power "microradio" class of LPFM service. While we are cognizant that many commenters believe that one watt would be insufficient power for any LPFM service,[52] we include it in our proposal to allow additional comment. We are uncertain whether the service would be more feasible at a somewhat higher power level, such as 10 watts ERP. Commenters should weigh the possible benefits and possible adverse impact of microradio stations and should consider appropriate distance separations to govern interference protection for such stations. If we were to adopt a microradio stations class, should such stations be required to protect each other against interference?

D. Interference Protection Criteria

38. We now turn to questions and proposals concerning interference protection criteria to govern the authorization of low power radio services. The types of interference protected against and the means of protection are pivotal issues that would significantly affect the number of LPFM stations that could be authorized and the extent of services provided by these stations. The interference protection criteria selected for LPFM stations could also affect existing and future service of FM radio stations of all classes. We urge commenters to consider carefully these issues.

39. Commercial FM stations traditionally have been authorized to operate on channels allotted for a particular community and class of station. A maximum power and antenna height is specified for each station class, which determines the maximum service area for the class. FM channel allotments are determined on the basis of specified minimum distance separations from other allotments for the same channel and three pairs of adjacent channels.[53] FM allotment separations are computed on the basis of maximum class facilities. Distances are derived from a desired-to-undesired signal strength ratio

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20 dB) with a radius of 5.7 kilometers (3.5 miles) and a first-adjacent channel interference contour (0.5 mV/m, based on 6 dB protection) of 2.6 kilometers (1.6 miles). Such stations could be located as close as 5.7 kilometers to the edge of the service area contour of the nearest co-channel station or 2.6 kilometers to the edge of the service area contour of the nearest first-adjacent channel station.

[51] *See* para. 0, below.

[52] For example, the Community Radio Coalition ("CRC") proposes a minimum of five watts. CRC Petition for Rule Making at 3.

[53] Pursuant to Sections 73.213 and 73.215 of our rules, FM stations may be assigned at locations that do not meet the distance separations of Section 73.207 on the basis of a combination of reduced separations and signal contour protection.

methodology to permit interference-free broadcasts within each station's protected service contour. The use of distance separations for determining channel allotments has proven to be an effective and straightforward means for maintaining the technical integrity of the FM radio service.

40. *Minimum Distance Separations Between Stations.* If we were to create one or more classes of low power radio service, we would expect to receive a very large volume of applications. The expeditious authorization of such service requires a simple, yet effective, means of controlling interference among stations. With this in mind, we believe minimum distance separations between stations may be the best practical means of governing interference to and from low power radio stations. Appendix B hereto presents several tables which specify minimum distance separations for the LPFM classes described above, including an explanation of how these distances were determined. The tables consider the following interference protections: co-channel, 1st-adjacent channel, 2nd-adjacent channel for reserved band frequencies, 2nd/3rd-adjacent channel for commercial band frequencies (in the event we were to require these protections) and intermediate frequencies. In the tables, protection of LPFM stations to each other includes minimum separations for only co-channel and first-adjacent channel interference. The various tables include minimum distance separations for maintaining existing levels of protection to radio stations of each particular class, as well as station separations for equivalent protection from LPFM stations to other LPFM stations. The appendix also includes tables of distance spacings for stations that would operate within 320 kilometers of the common borders with Canada or Mexico, based on the protection requirements in our agreements with these countries. 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. 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. A contour protection-based licensing system could also impose substantial additional processing burdens on the staff. We are concerned, therefore, that adoption of this approach could substantially delay the authorization of low power radio service and place a heavy burden on small LPFM applicants.[54] In contrast, use of minimum spacings would facilitate not only a streamlined application process, but would also enable a quick automated "self-check" of frequency availability before an applicant files its application (*see* paragraph 0, below).

41. We seek comment on our proposed use of minimum distance separations and, in particular, on whether the specific values tabulated in Appendix B are appropriate for the different types of interference protections.[55] While we believe it is important to afford a level of protected service to low power stations, particularly LP1000 stations, we invite comment on whether low power stations of a particular class should

[54] For example, a contour overlap approach would involve terrain data and computations of antenna height above average terrain. It would also require applicants to submit data on directional antenna patterns, which the Commission would enter into a directional antenna data base.

[55] We include minimum separation distances for protection to and from stations operating on 2nd- and 3rd-adjacent channels, even through the need for these protections for LPFM stations are at issue in this proceeding.

be permitted to accept interference from other stations, including interference from other low power stations. If so, should this be permitted only where there are interference agreements between stations? For secondary LPFM service, should there be a limit to the amount of interference that could be received for a channel to be considered available? 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 74.705, 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.[56] Depending on our initial experience in authorization of LPFM service, should we later consider a more sophisticated and spectrally efficient approach? We invite comment on these issues, including the effectiveness of alternative approaches for interference protection.

42. *Types of Interference Protection Standards.* No commenter in this proceeding takes issue with the need to protect stations operating on the same channel or on a 1st-adjacent channel from interference caused by LPFM facilities, and we propose these protections for any LPFM class we would authorize. At issue is the need to protect stations operating on the 2nd- and 3rd-adjacent channels with respect to LPFM stations. Commenters supporting LPFM services generally oppose any requirements for 2nd- or 3rd-adjacent channel protections, contending such interference from low power stations would be, at most, minimal.[57] Some commenters, including the NAB, NPR, and New Jersey Broadcasting, Inc., believe these protections should be retained to prevent interference and/or protect future digital terrestrial radio service.[58] As noted below, these protections would limit substantially the number of channels available for low power radio generally and could preclude altogether the introduction of LPFM service in mid-sized and large cities. Therefore, to the extent possible, we are inclined to authorize low power service without any 2nd- and 3rd-adjacent channel protection standards.

43. *Third-Adjacent Channel Protection.* We believe that a strong case can be made for not requiring 3rd-adjacent protection to or from any of the contemplated classes of LPFM station; *i.e.*, protection to stations operating on channels separated by 600 kHz. We believe that authorizing LPFM service without a 3rd-adjacent channel protection requirement would entail, at worst, little risk of interference to existing radio service. Areas of potential interference would be very small and occur only in the immediate vicinity of the low power transmission facility. An LP1000 station operating with maximum facilities would be predicted, under the current protection ratios, to cause 3rd-adjacent channel

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[56] *Notice of Proposed Rule Making and Order* in MM Docket No. 98-93, 13 FCC Rcd. 14849, 14863-65 (1998).

[57] For example, the Skinner Petition at 34 suggests that these protections are no longer necessary because of "vast improvements in receiver technology since the restrictions were created decades ago." CRC asserts that these protections are unnecessary for LPFM facilities operating with less than 50 watts at 100 meters HAAT (or any equivalent combination of power and HAAT). CRC Petition for Rule Making at 3.

[58] NAB Comments at 20-25; NPR Statement at 7; New Jersey Broadcasting, Inc. Comments at 2-4. *See also* USA Digital Radio, Inc. Comments at 7-8 (addressing 2nd-adjacent channel protections only).

interference t- a distance of 1.4 kilometers (0.9 miles) from its antenna, and even this very small predicted interference zone could possibly pose a potential problem to other stations only if the LP1000 station were located at, or very near, the outer edge of the protected station's service contour.[59] The interference potential would be even less for LP100 stations. By comparison, the 3rd-adjacent channel interference contour of a maximum-facilities Class A station is 3 kilometers (1.8 miles), while such a contour for a maximum-facilities Class C station is 14 kilometers (8.7 miles). In 1997, we eliminated the 3rd-adjacent channel protection for full power "grandfathered short spaced stations," including stations that operate at substantially higher power levels than LP1000 stations. That decision was supported by nearly all parties filing comments in that proceeding.[60] Additionally, no comments yet filed in this proceeding provide technical support for including this restriction.

44. Relaxed interference standards for low power FM stations may be the only way to "find" sufficient spectrum in medium and larger markets to create any new viable service of 100 watts or more.[61] For example, staff analysis[62] suggests that with full protection requirements, no LP100 or LP1000 stations could be authorized in Denver, Colorado. No LP1000 and only three LP100 stations could be authorized in Minneapolis, Minnesota. If there were no 3rd-adjacent channel protection requirement, 1 LP1000 or 4 LP100 stations might locate in Denver and perhaps 1 LP1000 or 9 LP100 stations could be located in Minneapolis.

45. On balance, we believe that creating opportunities for new LPFM service should outweigh any small risks of interference to and from LP1000 and LP100 stations. In choosing potential station locations, LPFM applicants would be advised to take into account spectrum congestion considerations and evaluate the extent to which third-adjacent signals could pose a problem. In most instances, we believe the actual effects of such interference might well be insignificant. We seek comment and analysis on our tentative conclusion not to include 3rd-adjacent channel protection requirements for any LPFM service.

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[59] A protected station's signal is most vulnerable to interference where it is weakest, *i.e.*, at the outer edge of the protected station's coverage area. Within the coverage area, the protected signal increases in strength as the station location is approached, thus tending to mask the effects of interference.

[60] *Report and Order* in MM Docket No. 96-120, 12 FCC Rcd 11840, 11847-49 (1997) (*Grandfathering of Short-Spaced Stations R&O*). We note that the decision was not supported by NAB.

[61] To illustrate, suppose we were to apply minimum distance separations for LPFM stations giving protection equivalent to levels that full service FM stations protect each other. LP1000 stations would then have to be separated from existing 2nd- and 3rd- adjacent channel FM stations by approximately 31 to 96 kilometers (19 to 60 miles), depending on the protected station's class. Minimum separation distances of about 17 to 65 kilometers (10.5 to 40 miles) would be required to protect LP1000 stations from the higher station classes. Appendix A gives the minimum separation distances for second adjacent channel protection among the various FM radio classes.

[62] Appendix D suggests the extent of available spectrum in sample cities of different population groupings and under different levels of interference protection.

46. *Second-Adjacent Channel Protection Standards.* FM radio stations protect other stations operating on the 2nd-adjacent channel where the frequency separation is 400 kHz. For example, a Class A station must be located at least 31 kilometers (19 miles) from another Class A station on a 2nd-adjacent channel and 95 kilometers (59 miles) from a Class C station on a 2nd-adjacent channel.[63] 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.[64] We found only a small risk of interference in that context, which was outweighed by improved service. Similarly, in the noncommercial service, we have been willing to accept small amounts of potential second- and third-adjacent channel interference where such interference is counterbalanced by substantial service gains. *Educational Information Corporation*, 6 FCC Rcd 2207 (1991).[65] We ask commenters to assess the level of risk of increased interference to stations in existing FM services that would result from permitting LPFM stations to locate without regard to 2nd-adjacent channel spacing for this service and to weigh any costs against the additional service to the public that could result. Commenters should consider the likelihood and potential extent of any harmful effects on current stations and listeners, taking into account the size and location of the areas possibly affected and the interference immunity of the existing receiver population. We also seek comment on the state of receiver technology and the ability of receivers to operate satisfactorily in the absence of 2nd-adjacent channel protection.

47. It is also important, as urged by some commenters, to take into consideration the implications of 2nd-adjacent channel protection for the possible conversion of existing analog radio services to a digital mode. While the Commission has yet to formally advance any specific proposals, it has already expressed its support for a conversion to digital radio.[66] One specific proposal was recently submitted in a rule making petition (RM-9395) filed by USA Digital Radio Partners, L.P. ("USADR"),[67] a terrestrial digital radio proponent of a technology that uses an in-band-on-channel ("IBOC") technology, in which an FM radio station's analog and digital signals would share portions of the same channel. It is possible that we will consider one or more variations of IBOC proposals that would use the outer "edges" of a channel's specified bandwidth and/or portions of the adjacent channel to transmit a digital signal.[68] This signal

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[63] For commercial FM stations authorized under the contour methodology, the required separations are slightly smaller; however, the predicted field strength of a potentially interfering station can be no more than 40 dB stronger than the protected field strength along a station's protected contour. 47 C.F.R. § 73.215.

[64] *Grandfathering of Short-Spaced Stations R&O* at 11849.

[65] We seek comment on the original rationale for 2nd- and 3rd-adjacent channel protections and the extent to which circumstances have changed in such a way to support relaxation of these protections.

[66] *Report and Order* in Gen Docket No. 90-357, 10 FCC Rcd 2310, 2315 (1995).

[67] *Public Notice*, DA 98-2244 (November 6, 1998).

configuration would reduce the frequency separation ("guardband") that insulates between channels, and we must examine how this could affect the propensity of LPFM stations to interfere with IBOC digital transmissions centered on second-adjacent channels. In the existing radio environment, USADR suggests that 2nd-adjacent channel interference from analog FM signals would not pose an interference threat to its IBOC signal.[69]

48. Staff analysis suggests that the current 2nd-adjacent protection standards would be a substantially larger impediment to LPFM service than the 3rd-adjacent standard, especially in large and medium-size cities.[70] As examples, two LP1000 stations could be located in Nashville, Tennessee if there were no 3rd-adjacent channel protection requirement and as many as ten might be possible if a 2nd adjacent standard also were not required; in San Francisco, no LP100 station could be located with a 2nd-adjacent standard, but two such stations would fit if there were no need for 2nd- and 3rd-adjacent channel protection standards; at least one LP1000 station could be authorized in Los Angeles and Pittsburgh, but only without 2nd- and 3rd-adjacent channel protection standards. The inclusion or exclusion of 2nd-adjacent channel protection requirements for LPFM stations would greatly affect the extent to which LPFM service could be introduced and, therefore, to the extent possible, we would prefer not to adopt any such requirements for LPFM stations. The low ERP levels proposed for LPFM stations (especially LP100 stations), together with a tight spectral emission mask for such stations and our proposed requirement to certify transmitters,[71] should significantly reduce the potential for harmful interference to existing service, even if 2nd-adjacent channel interference protections are not adopted.

49. We are concerned that our understanding of future IBOC systems is preliminary and that we may not be fully aware of any negative impact or restrictions that authorization of low power radio service would have on the transition to a digital IBOC technology for FM stations. Clearly, we need to better understand the potential impact of second-adjacent channel LPFM protection standards on the successful development of an IBOC system. Without a 2nd-adjacent channel protection standard, would analog LP1000, LP100, and microradio stations be likely to adversely affect current IBOC designs and, if so, how and to what extent? What would be the effect of digital LPFM stations operating with IBOC technology? Are measurement results available to inform the analyses of the potential for 2nd-adjacent channel interference? As noted more fully below, we are interested in examining LPFM emissions and bandwidth

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[68] For example, in USADR's proposed "FM hybrid mode," digital sidebands would occupy the "70 kHz regions between 129 and 199 kHz from the center frequency on either side of the analog spectrum." USADR Petition at 47. Appendix C also discusses the issue of second-adjacent channel protection to the IBOC signal.

[69] For example, USADR states that "an analog second adjacent interferer will have a negligible effect on the performance of the all-digital signal, since it does not overlap in frequency with the desired all-digital signal." USADR Petition, Appendix E at 42.

[70] The extent of channel availability for LPFM service with and without a 2nd-adjacent protection standard is depicted in Appendix D.

[71] *See* paras. 0, above, and 0, below.

limitations as possible means of ameliorating some interference concerns. Could a strict spectral emission mask and/or a reduced channel bandwidth for LPFM stations play a significant role in reducing the potential for interference, if there were no minimum station separation requirements for LPFM stations operating on the 2nd-adjacent channels to other FM stations? Conversely, could potential interference to digital radio be minimized by such measures as filters and other digital receiver improvements? Would our proposal to certify transmitters, described at paragraph 0, below, be useful in minimizing interference to digital service? In this regard, we are particularly interested in the views of digital radio designers and manufacturers. At this initial stage of our involvement with digital radio, we ask whether the IBOC signal could be designed to be robust against interference from lower power stations operating without a minimum spacing requirement on the second-adjacent channel. What design tradeoff would be involved and with what implications to the effectiveness of terrestrial digital radio? In this regard, would it be appropriate to consider standards for future digital receivers? Finally, we ask whether it would be appropriate to impose a 2nd-adjacent channel protection requirement on LPFM stations for the purpose of protecting a possible future digital radio technology, considering that creating opportunities for new radio service is also an important Commission goal. In this regard, we also note that, as secondary services, LP100 and microradio stations would not be permitted to interfere with future digital radio stations within their protected service areas.

50. We seek comment on whether we should consider lower interference standards for the LPFM service. A staff study, attached hereto as Appendix D, demonstrates that if LPFM stations are required to comply with current interference restrictions, there will be few or no licenses available in most major markets. This study also shows that we measurably increase the opportunity to engineer in LPFM stations if third-adjacent channel protection standards are eliminated and dramatically increase such opportunities if second-adjacent channel standards are not considered. The paucity of major market LPFM spectrum under our current rules testifies to the aggressive efforts of existing broadcasters to maximize service. Principally for this reason, we are disinclined to extend reduced second- and third-adjacent channel protection standards to full power FM stations. We believe that the relatively low maximum power levels of the LPFM stations under consideration here support this distinction. Such stations could create only very limited areas of harmful interference, especially if we impose additional technical modifications to reduce their interference potential. We also note that if we were to take this step, opportunities for low power stations would diminish as existing broadcasters move quickly to improve their own facilities. We seek comment on these issues.

E. LPFM Emissions and Bandwidth

51. We believe that the extent to which LPFM stations would degrade FM radio service on the 2nd-adjacent channel would be considerably limited by their lower ERP and HAAT levels. In addition, we seek other technical means for further reducing this interference potential. In this regard, we could restrict out-of-channel emissions by establishing a strict spectral emission mask and/or by reducing the transmission bandwidth for LPFM stations. We are also proposing to require FCC certification of transmitters used at all LPFM stations, which we believe would be necessary to ensure compliance with out-of-channel emission requirements, particularly if the LPFM service does not include 2nd- and 3rd-adjacent channel protection requirements. We are vitally concerned that such stations meet transmitter out-of-channel emission limits and other standards related to interference protection of stations on adjacent channels. We note that uncertified equipment has on numerous occasions caused dangerous interference to

aviation frequencies.[72] We do not believe that a certification requirement would overly burden small operators, given the recent streamlining of our certification procedures.[73] We seek comments on this proposal, including not only on burdens of compliance, but specific harms that could result from not requiring transmitter certification. We also ask whether a modulation monitor should be required or, alternatively, whether transmitters should be certified with built-in modulation limits.

52. *Emission Limits*. Outside of their assigned channels, the emissions of FM radio stations must be attenuated below the level of the unmodulated carrier frequency: (1) by at least 25 dB at any frequency removed from the center frequency by 120 kHz up to 240 kHz; (2) by at least 35 dB at any frequency removed from the center frequency by 240 kHz up to and including 600 kHz; and (3) by at least 43 dB + 10log(Power, in watts) dB on any frequency removed by more than 600 kHz from the center frequency. 47 C.F.R. Section 73.317. This emission mask ensures that FM broadcast emissions are reasonably confined within the 200 kHz channel width.

53. The center frequency of a second-adjacent channel is 400 kHz removed, and the minimum separation between the channel edges of 2nd-adjacent channels is 200 kHz. The current emission mask requires a minimum attenuation of 35 dB below the level of the unmodulated carrier for emissions extending over the second-adjacent channel. We invite comment on the extent to which an increased emission attenuation requirement would reduce the potential for 2nd-adjacent channel interference, assuming no 2nd-adjacent channel spacing requirements. By how much would this attenuation have to be increased in this regard? 10 dB? 20 dB? What would be the consequences of a more restrictive emissions mask for LPFM stations? For example, at what point would tighter emission limits become cost prohibitive?

54. We recognize the difficulty in quantifying the potential benefits of emission limitations to future digital systems in the absence of standards for these systems. Nonetheless, based on what is known about IBOC technology, commenters are invited to consider generally the relationship between an LPFM emission mask and protection to digital signals. Could a strict emission mask for LPFM stations significantly reduce the potential for interference to IBOC signals, presuming we did not impose 2nd-adjacent channel spacing requirements on LPFM stations?

55. *Bandwidth Limits.* FM broadcast channels have a bandwidth of 200 kHz. The center frequency of each channel is 100 kHz from the upper and lower edges of the channel, and the frequency modulated ("FM") signal in each channel swings in frequency from the center frequency toward the channel edges, and has its radiated power envelope shaped such that virtually all of the energy of the signal is contained within the channel. The potential for interference could be further reduced if LPFM stations operated with a reduced bandwidth, creating additional frequency separation to adjacent channels. A reduced bandwidth in combination with a strict emission mask would offer even more protection. For

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[72] *See, e.g.*, para. 0, below.

[73] *See Equipment Authorization Streamlining R&O*, FCC 98-338 (released Dec. 23, 1998).

example, suppose the channel bandwidth were reduced by approximately half.[74] This reduced bandwidth would ameliorate the possible adjacent channel interference impact of new LPFM stations. By reducing the bandwidth available to LPFM stations, and with the corresponding contraction in the spectral mask, we believe that all types of adjacent channel interference from these stations could be significantly reduced. We seek comment on the effectiveness of reduced bandwidth as an alternative means of interference protection, particularly with regard to 2nd-adjacent channels. What bandwidth reduction would best serve this purpose? What emission mask for a reduced channel bandwidth would be appropriate to further restrict emissions on adjacent channels?

56. We inquire about the operational effects of reduced bandwidth on LPFM stations. First, would LPFM signals be received by existing radios; for example, car radios, home stereo systems, and boom boxes? At what level of bandwidth reduction would LPFM stations not be able to transmit stereo signals? We would be particularly concerned with the impact of a narrowed bandwidth on the transmission of stereophonic sound. A narrowed channel bandwidth could also restrict or preclude the use of baseband subcarriers by LPFM operators; subcarriers are utilized by FM stations for a variety of purposes. Would prospective LPFM operators be willing to sacrifice the use of subcarriers in return for the ability to broadcast a narrow band radio signal? Could the loss of LPFM subcarrier services such as those typically provided by full power FM stations be detrimental to the public? In seeking comment on possibly narrowing the channel bandwidth for LPFM stations, we are interested in the optimal bandwidth that would strike the right balance between facilitating a larger number of potential stations and optimizing the services that could be offered by those stations. Commenters should address the specific stereophonic sound transmission standards which would be appropriate for a reduced channel bandwidth, including pilot tone, L/R subcarrier, highest modulating frequency, and maximum signal deviation. Establishing a reduced channel bandwidth for LPFM could necessitate the development and manufacture of new lines of transmitting equipment, at an unknown cost, and reduce the availability of transmitters for LPFM stations, especially used transmitters designed for a 200 kHz bandwidth. We seek comment on these matters and, generally, on whether any adverse effects of LPFM operations on a reduced channel bandwidth could outweigh the increased channel availability that could result.

F. Ownership and Eligibility

57. *Local and Cross Ownership*. We see the increased opportunity for entry, enhanced diversity, and new program services as the principal benefits of a new low power service. These goals may be hard, if not impossible, to achieve if LPFM stations are made available to existing broadcasters, or if a number of the new LPFM facilities in an area are under common control. Accordingly, we tentatively conclude that strict local and cross-ownership restrictions would be appropriate for the low power radio service. First, we propose not to permit a person or entity with an attributable interest in a full power broadcast station to have any ownership interest in any LPFM (or microradio) station in any market, and to prohibit

[74] We could specify, for example, that the signals from all LPFM stations be attenuated by at least 25 dB at spacings of 60 kHz to 180 kHz from the channel center frequency, by at least 35 dB at spacings of 180 kHz through 540 kHz from the channel center frequency, and by at least 43 dB + 10log(Power, in watts)dB on any frequency removed by more than 540 kHz from the channel center frequency.

joint sales agreements, time brokerage agreements, local marketing or management agreements, and similar arrangements between full power broadcasters and low power radio entities. As a corollary to this proposal, we are not proposing to give an application preference to AM station licensees, as urged by Crusading Broadcasting Ministry, Inc. and Robert M. Stevens. We do seek further comment on this issue, and on whether we should permit AM licensees to file applications contingent on the divestiture of their AM station in the event they are successful in obtaining an LPFM station. In addition to this cross-ownership rule, we propose to limit multiple ownership by prohibiting any individual or entity from owning more than one LPFM (or microradio) station in the same community. These restrictions would seem to obviate any arguable benefit from the restriction urged by some commenters on the form of business entity that could be an LPFM licensee.[75] We have used various designations for applying our multiple ownership rules for full power radio services, including signal overlap, Designated Market Area, and markets designated by the commercial audience ratings services. We seek comment on the appropriate definition of "market" or "community" for purposes of the restriction proposed here, as well as on what other interests or relationships (if any) should be attributable in the context of low power radio.

58. We seek comment on whether the proposed cross-ownership restriction will unnecessarily prevent individuals and entities with valuable broadcast experience from contributing to the success of the service, or whether it is necessary to keep the service from being compromised or subsumed by existing stakeholders. Commenters should also address the alternative of permitting individuals and entities with attributable involvement in broadcasting to establish LPFM (or microradio) stations in communities where they do not have an attributable interest in a broadcast station. We also seek comment on whether the cross-ownership restriction should be extended to prevent common ownership of LPFM or microradio stations with newspapers, cable systems, or other mass media.

59. We are cognizant of the provisions of the Telecommunications Act of 1996, noted by some commenters, which permit significant local multiple ownership of existing full power stations.[76] We tentatively believe, however, that those provisions would not apply to a service that did not exist in 1996. We also tentatively believe that Congress's intent, to enhance commercial efficiencies in the radio broadcast industry, does not sufficiently apply to the new classes of service we are contemplating. Commenters should address the applicability of the relevant provisions of the 1996 Act to these considerations. They should also address whether this one-station-per-market limitation unnecessarily restricts efficiencies for operators in any of the new classes of service being considered, as argued by some, or rather is indeed appropriate to enhance the availability of LPFM or microradio stations, as insisted by others. We also seek comment on possible cooperative arrangements (short of attributable interests such as discussed in paragraph 0, above) among LPFM licensees that might facilitate the new service's development without unduly diluting its benefits, a concern of many commenters.

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[75] We find unpersuasive the Leggett proposals, seconded by some commenters, that would restrict the personal or corporate wealth of an LPFM licensee. Neither an abundance nor absence of wealth affects an individual or entity's ability to provide a potentially valuable radio service to the public.

[76] Section 202(b) of the 1996 Act significantly relaxed the Commission's restrictions on the number of radio stations a licensee could own in individual radio markets.

60. *National Ownership*. With regard to national ownership, we do not see at this time a need to restrict as severely the number of LPFM (or microradio) stations an individual person or entity may own nationally. As with full power stations, we expect that economies of scale would allow licensees to improve their service to the listening public. We expect that the nature of the service LP100 and microradio facilities provide would attract primarily local or nearby residents. Operating a group of LP1000 stations may provide a licensee with essential broadcasting experience to assist potential new entrants in their attempts to acquire and operate full power stations. However, because competition and diversity have a greater impact on viewers on a local level than on a national scale,[77] we tentatively believe that these national efficiencies would likely outweigh the competition and diversity costs to viewers. With regard to all three classes of service considered, it may be that particular issues and needs that they might address recur throughout the country and can be effectively addressed, perhaps more effectively in some instances, by an operator with multiple facilities. Consistent with the proposals of a number of parties, we seek comment on whether a limit of five or ten stations nationally would provide a reasonable opportunity to attain efficiencies of operation while preserving the availability of these stations to a wide range of new applicants. Again, we are cognizant of the provisions of the 1996 Act, which eliminate national ownership restrictions for full power radio service,[78] and seek comment as to whether our proposals are consistent with those statutory provisions and Congress' underlying intent in adopting them.

61. *Residency Requirements*. Although urged on us by many commenters,[79] we do not propose to establish a local residency or an "integration"[80] requirement for any LPFM stations. Regarding LP1000 stations, we have long recognized that full power stations require neither local residency nor integration between ownership and management to assess and address local needs and interests. Such a restriction would also frustrate any attempt at achieving certain efficiencies from national multiple ownership long recognized as beneficial for full-power stations.[81] Additionally, because the service areas for LP1000 stations will be relatively small, a potential new entrant may hold residency in a location where no LP1000 channels can be found, so that we might frustrate one of the significant potentials of LP1000 stations with such a requirement. The same rationale can be applied to LP100 and microradio stations. Moreover, as

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[77] *See, e.g.*, *Further Notice of Proposed Rule Making* in MM Docket Nos. 91-221 and 87-8, 10 FCC Rcd 3524, 3565 (1995) (*TV Ownership Further Notice*) (noting that broadcast and other outlets are viewed locally, rather than nationally).

[78] Section 202(a) of the 1996 Act.

[79] *E.g.*, CRC Petition for Rule Making at 4-5.

[80] Integration is involvement by the licensee in the day-to-day management of the station.

[81] While we feel that these efficiencies are outweighed with respect to local multiple ownership restrictions, we do not feel there are benefits inherent in local residency or integration requirements sufficient to outweigh the efficiencies achievable through nonlocal multiple ownership.

noted above, we expect the nature of the service provided by the two smaller class of stations would attract primarily local or nearby residents in any event. Given these suppositions, we do not believe that any benefits that might accrue from such restrictions would be sufficient to warrant the proof and enforcement efforts that they would entail. We seek public comment on these assumptions and the resulting proposal.

62. We also note the probable limitations on our discretion to adopt an integration requirement. In 1992, the Commission was directed to reexamine the integration of management and ownership criterion that it had traditionally used to evaluate competing applications in a comparative hearing for a new commercial broadcast station. *Bechtel v. FCC*, 957 F.2d 873 (D.C. Cir. 1992); *see also Bechtel v. FCC*, 10 F.3d 875 (D.C. Cir. 1993). The court determined that until the Commission could demonstrate that application of this criterion serves the public interest, its continued use would be arbitrary and capricious. The Commission's subsequent rule making proceeding addressing this issue was still pending when the Balanced Budget Act of 1997 mandated that future mutually exclusive full power commercial broadcast applications be resolved through auctions. Accordingly, the proceeding was terminated. *First Report and Order* in MM Docket 97-234, GC Docket 92-52, and Gen Docket No. 90-264, 13 FCC Rcd 15920 (1998) (*Auctions R&O*). As a result, given the court's holdings in the *Bechtel* cases, we believe that we would require a particularly compelling record indicating that listeners would be less well served by stations not managed by their owners before we could adopt an integration requirement that could withstand judicial scrutiny. We ask for comment on this analysis.

63. Another residency issue concerns alien ownership. As broadcast stations, all low power facilities would be subject to the statutory restrictions on alien ownership enumerated in Section 310(b) of the Communications Act. Thus, no license could be granted to a foreign government or a representative of a foreign government; an alien or representative of an alien; a corporation organized under the laws of a foreign government; or any corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or its representatives or by any corporation organized under the laws of a foreign country. 47 U.S.C. § 310(a), (b)(1), (b)(2), and (b)(3). Additionally, pursuant to 47 U.S.C. § 310(b)(4), no license could be granted to "any corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof, or by any corporation organized under the laws of a foreign country, if the Commission finds that the public interest will be served by the refusal or revocation of such license."

64. *Character Qualifications and Unauthorized Broadcasters*. We propose to apply the same standards for character qualifications requirements to all LPFM broadcasters as we do to full power broadcasters. *See Policy Statement and Order*, 5 FCC Rcd 3252 (1990), *recon. granted in part and denied in part*, 6 FCC Rcd 3448. *See also Report, Order, and Policy Statement* in Gen. Docket No. 81-500 and BC Docket No. 78-108, 102 FCC 2d 1179 (1986), *recon. granted in part and denied in part*, 1 FCC Rcd 421 (1986). We do not see any reason to distinguish between LPFM (or microradio) and other broadcast licensees for this purpose. Commenters believing otherwise are invited to explain the rationale for any distinction.

65. We note how this issue relates to the particular issue of previously and currently unlicensed

operators. Unlicensed radio operators not only violate the longstanding statutory prohibition against unlicensed broadcasting[82] and our present rules on unlicensed broadcasting,[83] but they also use equipment of unknown technical integrity. Such illegal radio transmissions raise a particular concern because of the potential for harmful interference to authorized radio operations, including public safety communications and aircraft frequencies. For example, in March, 1998, the Commission closed down an unlicensed radio operation in Sacramento, California, that had disrupted air traffic control communications on four separate occasions.[84] We have also shut down illegal broadcast operations that were causing harmful interference to air traffic control communications at the Miami and West Palm Beach, Florida, airports.[85]

66. The Commission has repeatedly urged all unlicensed radio operators to cease broadcasting. When they have not, we have filed complaints in federal district courts to shut them down by seeking: (1) injunctive relief pursuant to 47 U.S.C. § 401; (2) seizure and forfeiture of the radio station equipment pursuant to 47 U.S.C. § 510; (3) monetary forfeitures pursuant to 47 U.S.C. § 503; and/or (4) criminal penalties pursuant to 47 U.S.C. § 501. In addition, we have issued cease and desist orders pursuant to 47 U.S.C. § 312 to a number of unlicensed broadcasters. Nevertheless, despite repeated warnings by Commission officials and the Commission's successes in federal district court litigation, *see United States v. Dunifer*, 997 F.Supp. 1235 (N.D. Cal. 1998), *appeal pending*, No. 99-15035 (9th Cir. 1999) (injunction); *United States v. Any and All Radio Station Transmission Equipment*, 1998 WL 884468 (E.D. Mich. 1998), *appeal pending*, No. 98-2396 (6th Cir. 1999) (seizure and forfeiture of radio station equipment), some unlicensed broadcasters have persisted in their unlawful activity.

67. It is well established that the Commission is rightfully concerned with "misconduct which demonstrates the proclivity of an applicant or licensee to deal truthfully with the Commission and to comply with our rules and policies." *Policy Regarding Character Qualifications in Broadcast Licensing*, 102 FCC 2d 1179, 1190-91 (1986). Parties who persist in unlawful operation after the Commission has taken any of these enforcement actions could be deemed *per se* unqualified, and we seek comment as to the eligibility of such parties for a license in any new radio service. We seek comment on whether there are circumstances under which such a party could be considered rehabilitated. The reliability as licensees of parties who may have illegally operated for a time but have ceased operation after being advised of an enforcement action, however, is not necessarily as suspect. We seek comment on the propriety of accepting as licensees of low power (or microradio) licenses parties who may have broadcast illegally but have promptly ceased operation when advised by the Commission to do so,[86] or who voluntarily cease

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[82] 47 U.S.C. § 301.

[83] *See, e.g.*, Part 15 of the Commission's rules, 47 C.F.R. Part 15.

[84] *See News Release* Report No. CI 98-3 (March 20, 1998).

[85] *See News Release* Report No. CI 97-12 (October 24, 1997).

[86] Of course, as authorized Commission licensees, LPFM broadcasters that violate Commission rules would be subject to the enforcement rules (including forfeiture amounts) that apply to other broadcasters, rather than those

operations within ten days of the publication of the summary of this *Notice* in the *Federal Register*.

G. Service Characteristics

68. *Local Programming*. We seek comment on whether to impose a minimum local origination requirement on any of the three proposed classes of LPFM service, as proposed by some commenters.[87] Listeners benefit from local programming, since it often reflects needs, interests, circumstances, or perspectives that may be unique to that community, and many LPFM supporters would have the Commission's rules actively promote locally-oriented programming by, for instance, limiting the amount of network programming. However, based on our expectation of the nature of the licensees that will populate LPFM, supported by the comments received by those expressing an interest in acquiring their own stations, we expect that a significant amount of programming will be locally produced as a matter of course. Moreover, and importantly, programming does not have to be locally-produced to have interest or value to the listeners in any particular locale. Accordingly, we are inclined to give low power (and microradio) licensees the same discretion as full-power licensees to determine what mix of local and nonlocal programming will best serve the community. However, in order to promote new broadcast voices, we propose that an LPFM station not be permitted to operate as a translator, retransmitting the programming of a full-power station. We seek comment on these positions.

69. *Commercial Programming*. Commenters disagree as to whether low power radio should be limited to noncommercial operation. We seek comment on this issue. LP1000 stations may need to generate revenue in order to remain operational. Some LP100 stations might sell some form of advertising to subsidize their operation and could possibly provide a useful advertising alternative for certain types of neighborhood businesses that cannot utilize full-power radio stations due to their expense and their broader geographic targeting. Similarly, noncommercial licensees might attempt to seek underwriting funds from neighborhood groups and businesses. Some commenters contend that a noncommercial restriction would increase the amount of "quality" programming available to the public. Others contend that a noncommercial limitation would increase the availability of such stations to educational institutions. We seek comment on whether programming on these stations should be strictly noncommercial and whether our current eligibility rules are appropriate, which permit educational and nonprofit community organizations to become licensees. However, should we not impose such a broad limitation, we note the possibility that part of the FM band will remain reserved for noncommercial LPFM operators, as discussed above at paragraph 0. This would ensure that a significant portion of low power radio facilities would be noncommercial in nature.

70. *Public Interest Programming Requirements*. Because they would be primary stations with potentially substantial coverage areas, we propose to require LP1000 licensees to adhere to the same Part 73 requirements regarding public interest broadcasting as apply to full power FM licensees. Most importantly, this means that each LP1000 licensee would be required to air programming serving the needs

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that now apply to unlicensed operators.

[87] *E.g.*, CRC Petition for Rule Making at 8.

and interests of its community (as community is defined in paragraph 0, below), using its discretion as to how to meet that obligation. As more specific examples, LP1000 station operators would be required to comply with programming-related rules regarding the broadcasting of: (1) taped, filmed, or recorded material;[88] (2) lottery information;[89] (3) sponsorship identification;[90] (4) personal attacks;[91] and (5) periodic call sign announcements.[92]

71. We seek comment on this proposal. In this regard, we also note that we have not proposed to allocate low power services to specific communities in the way that full power radio stations are, and signal coverage limitations would make such designations problematic. We propose that an LP1000 licensee's service obligations pertain to those listeners within its predicted 1 mV/m signal contour in the same way that full power radio station must serve the listeners in its community of license.

72. We expect the very nature of LP100 and microradio stations will ensure that they serve the public. Therefore, we are disinclined to put the burdens of complying with specific programming requirements on these licensees, particularly given the size of the operations we envision and the simplicity we are striving for in this service. We note that commenters that have addressed this issue in response to the Leggett and Skinner petitions generally do not believe that the Commission should impose and try to monitor specific public interest programming requirements for low power radio broadcasters, with the exception of licensees that would provide a service equivalent to the LP1000 service that we have proposed. We seek comment on this issue as it applies to each level of low power or microradio service we might adopt.

73. *Other Service Rules*. We also request comment on whether LPFM stations of each class should be subject to the variety of other rules in Part 73 with which full power stations must comply, including, for example, the main studio rule (47 C.F.R. § 73.1125(a)), public file rule (47 C.F.R. §§ 73.3526, 73.3527), and the periodic ownership reporting requirements (47 C.F.R. § 73.3615). Given the purposes and power levels of LP1000 stations, we tentatively conclude that LP1000 licensees should generally meet the Part 73 rules applicable to full power FM stations. However, we seek comment on whether sufficient useful purpose would be served in applying each rule to these licensees. We would be disinclined to apply these service rules to microradio stations, and we particularly seek comment with regard to the rules appropriate for LP100 stations. Commenters are invited to discuss which existing rules should apply or what new or modified rules would be more appropriate. Where a rule should not apply to

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[88] 47 C.F.R. § 73.1208.

[89] 47 C.F.R. § 73.1211.

[90] 47 C.F.R. § 73.1212.

[91] 47 C.F.R. § 73.1920.

[92] 47 C.F.R. § 73.1201.

a particular class of service, commenters should analyze the characteristics of that service that warrant disparate treatment for the purposes of that rule.

74. We also propose to treat low power radio stations like full power stations for the purposes of our environmental rules and responsibilities under the National Environmental Protection Act.[93] With respect to protection against exposure to radiofrequency radiation, we note that LP1000 and LP100 stations would operate at the power levels of some Class A FM stations, and thus the same safety and environmental concerns would seem to apply. We therefore propose to apply to these stations the maximum permissible exposure limits and related regulatory provisions that apply to FM radio stations. We invite comment on this matter, and specifically on whether and how we should treat LP100 stations differently from LP1000 stations and, if so, why. We also seek comment on how our environmental rules should apply to microradio stations, if this low power radio class is adopted.

75. We also seek comment on the applicability of the various political programming rules to each class of low power service we might adopt. There are two statutory provisions explicitly underlying some of these rules, and each is explicitly applicable to "broadcasting stations."[94] Thus, we lack the discretion not to apply these provisions to any class of LPFM station, regardless of its size. We seek comment on how each of these political broadcasting rules should be applied to low power stations, taking into consideration our statutory mandate.

76. *Operating Hours*. We are sympathetic with the position of some commenters that the market, not the Commission, should determine the hours a station operates. However, the Commission has determined that a minimum operating hours requirement for full power FM stations serves the public interest, and the LP1000 class is intended to be similar to full power FM in many respects. Because we intend LP1000 stations to help new entrants eventually participate in the full power radio industry, and because these stations may be able to compete with full power stations, we propose to require them to maintain the same minimum hours of operation as are required of the lowest class of full-power stations: generally two thirds of their authorized hours between 6 a.m. and midnight.[95]

77. With respect to LP100 and microradio stations, however, a combination of their lesser spectrum utilization, the nature of the anticipated licensees and their services, and practical enforcement concerns suggests at this time that a minimum operating schedule should not be established unless and until it is shown to be necessary. Such a determination could also be affected by whether we designate these as secondary services. Should we determine after an initial period of operation that spectrum is being

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[93] 47 C.F.R. §§ 1.1301-1.1319.

[94] 47 U.S.C § 312(a)(7) requires broadcast licensees to permit purchase of reasonable amounts of air time by a legally qualified candidate for Federal elective office. 47 U.S.C. § 315 requires that a broadcast station that permits any legally qualified candidate for (any) public office to use the station (with the exception of specified news coverage), must then afford equal opportunities to all other such candidates for that office.

[95] *See* 47 C.F.R. § 73.1740; *see also*, 47 C.F.R. § 73.561.

inappropriately underutilized by LP100 or microradio stations and that spectrum is being wasted (*i.e.*, that LPFM stations are not actually broadcasting very often yet are preventing others from utilizing their frequencies), we could then revisit the issue. Commenters are urged to address the efficacy of our proposals and their practicality for both licensees and the Commission's licensing and enforcement functions.

78. *Construction, License Terms, Sales, and Renewals*. We wish to provide ample time for construction, while providing for prompt introduction of service and discouraging speculative or insufficiently thought out applications. We wish to adopt limits that will obviate any need or justification to consider extensions of the construction permits we expect to issue.

79. Supporters of low power radio who discuss these issues suggest several different rules regarding construction periods, license terms, and renewals, ranging from relatively short license terms (such as four years) with provisions for renewal, to long terms (such as 14 years) with no renewal. One broadcaster suggests that construction permits be limited to 12 months, without possibility of extensions or transfer to another party. The Community Radio Coalition also contends that low power (or microradio) construction permits should not be transferable, in order to discourage trafficking in construction permits and speculative applications.[96]

80. We propose construction periods that vary with the class of service and complexity of facilities. We initially believe that LP1000 stations should have the same construction period, and restriction on extensions, as full-power radio stations.[97] While most of these stations should be easier to build than most full power stations, we expect that most LP1000 applicants may be relatively inexperienced in building broadcast facilities. We believe that LP100 and microradio stations should be able to be constructed in much less time and propose an eighteen-month construction limit for LP100 stations and a twelve-month limit for microradio stations. Both of these latter proposals assume a minimum of zoning or building permit delays. We question whether the proposed short construction period for LP100 and microradio applicants would encourage them to construct relatively simple broadcasting apparatus that would not entail significant zoning and building considerations. Given the simplicity of the application process we hope to adopt for these services, such a process should not be burdensome on the applicants or the Commission and should help to ensure the prompt initiation of new service. Also, we seek comment on the Community Radio Coalition's proposal to prohibit the transfer of low power radio construction permits in light of the ownership and construction terms proposed.

81. With regard to any construction period adopted for each service, we envision a strict enforcement of the deadline, as with other radio services.[98] We seek comment on the sufficiency of the

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[96] CRC Petition for Rule Making at 5.

[97] *See Report and Order* in MM Dockets Nos. 98-43 and 94-149, FCC 98-281 (released November 25, 1998) ("*Non-Technical Broadcasting Streamlining R&O*"), providing a three year construction period for new radio stations.

[98] *Id.*

construction periods proposed here to accomplish these goals. Commenters are also invited to address how Section 319(b) of the Communications Act of 1934, as amended, affects the rules that we will adopt for low power radio service. Pursuant to this statutory provision, a construction permit "will be automatically forfeited if the station is not ready for operation within the time specified or within such further time as the Commission may allow, unless prevented by causes not under the control of the grantee." 47 U.S.C. § 319(b).

82. We propose that LP1000 stations follow the Part 73 rules applicable to full-power radio stations with regard to the length of their license terms and renewal procedures. However, we ask if there is some regard in which their renewal process could be further simplified appropriate to their status and the nature of their service, consistent with statutory requirements. If there is little specific regulation for LP100 and microradio stations, we query how often and how closely we should actively monitor their performance, within the parameters of our statutory responsibility.[99] Would a *pro forma* process satisfy any statutory requirement, in the absence of specific public complaint, for the new classes of stations contemplated here?

83. While one goal of LP1000 stations could be to provide an entry opportunity, and thus the prospect of periodic renewal may be appropriate to encourage the investment of time, money, and effort to build a successful enterprise, we are open to comment on whether stations in other classes should be authorized for finite non-renewable periods, such as five or eight years, so that others may eventually take their turns at the microphone. (An existing operator could, of course, reapply for a station where there is not another (new) applicant.) Making broadcast outlets available to more speakers is a fundamental premise of this rule making effort, and we do not expect that such a limitation would discourage the very modest investment required to build such a station, particularly if the assets would be readily transferable. We seek comment on whether the disruption of service to the public outweighs the potential benefits of making this service available to more speakers on a consecutive basis. Our decision may be influenced by the number of low power stations we expect to be able to authorize under the rules we ultimately adopt. We seek comment on these proposals and on their underlying premises.

84. We also seek comment on whether a finite, nonrenewable license period for LP100 or microradio stations would contravene Congress' intention in adopting statutory provisions that provide for a "renewal expectancy" for broadcast stations. Section 309(k)(1) of the Communications Act of 1934, as amended, states that "[i]f the licensee of a broadcast station submits an application to the Commission for renewal of such license, the Commission shall grant the application" unless the station has not served the public interest, the licensee has committed serious violations of the Communications Act or Commission regulations, or the licensee has violated the Act or the Commission's rules in such a manner as to constitute a pattern of abuse. 47 U.S.C. § 309(k)(1). We tentatively believe that this provision does not direct the Commission to accept renewal applications for all broadcast services, but instead sets the standards for the Commission to follow when it chooses to accept renewal applications for a service. However, we

[99] Section 307(a) of the Communications Act of 1934, as amended, 47 U.S.C. § 307(a), provides for the grant of any application, including a renewal application, if the public convenience, interest, or necessity will be served, and Section 307(c)(1) provides for maximum license terms of eight years.

recognize that this interpretation might not be consistent with Congress's intent to give broadcasters greater assurance that their licenses would be renewed. Therefore, we ask commenters to address our interpretation.

85. A similar issue is raised with Section 307(c) of the Act, which states that each broadcast license shall be granted "for a term not to exceed 8 years. Upon application therefor, a renewal of such license may be granted . . . if the Commission finds that the public interest, convenience, and necessity would be served thereby." 47 U.S.C. § 307(c). We ask commenters to address whether non-renewable licenses would be inconsistent with this statutory provision.

86. Given the ownership restrictions proposed here, we do not believe it is necessary or appropriate to restrict the sale of any class of microradio station, as urged by some commenters.[100] These parties are concerned that service will be delayed by speculative applications and trafficking in construction permits. A significant market for trafficked construction permits might develop if there were numerous parties waiting to purchase large numbers of LPFM construction permits soon after their issuance to the initial permittees. This ready market might encourage the filing of speculative applications. However, we expect that the strict ownership rules we have proposed would not allow such a market to develop, because of the limits on LPFM stations that a party could own. Commenters are invited to address this issue, including whether restrictions on sales would be advisable if the Commission adopts ownership rules other than as proposed above.

87. *Emergency Alert System*. Since we expect LP1000 facilities to reach a significant number of people, we propose to treat them like full power FM stations for the purposes of the Emergency Alert System (EAS).[101] In this way, we would expect to avoid having significant numbers of people deprived of this critical information resource. By contrast, due to their extremely small coverage areas and probably very small audiences, as well as their limited resources, we propose that microradio stations, if adopted, not be required to participate in the EAS. We request comment on these proposals. We also request commenters to address how LP100 stations, with their intermediate size and audience reach, should fit into the EAS structure.

88. *Station Identification*. We ask commenters whether we should adopt a call sign system that would identify a low power radio station as such. This was our policy for low power television ("LPTV") stations for many years. As a result, LPTV stations did not use the four-letter call sign identification system used by full power stations. However, we note that the Commission eventually determined that the public interest would be served by allowing LPTV stations to use call signs that were like those of full power stations; the call sign itself need not identify a station as a low power facility.[102] Commenters

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[100] *See, e.g.*, CRC Petition for Rule Making at 5.

[101] We would amend Section 11.11(a) of our rules, 47 C.F.R. § 11.11(a), to add LPFM operators to the category of licensees subject to the EAS rules.

[102] *See First Report and Order* in MM Docket No. 93-114, 9 FCC Rcd 2555 (1994).

should explain whether the local population benefits by having an LPFM station's status identified through its call sign.

89. *Inspection by the Commission and Compliance with Its Rules*. The Commission has a strong interest in ensuring that all licensed facilities operate safely and in compliance with the Commission's rules. Therefore, we propose to apply Section 73.1225 of our rules, regarding stations inspections, to all classes of LPFM stations: As with full power broadcast stations, all LPFM stations would be made available for inspection by Commission representatives at any time during their business hours or at any time they are in operation. We stress that, as with all broadcast services, the licensee is the party that is responsible for operation of the station and for its full compliance with all Commission rules.

90. Section 74.1203, 47 C.F.R. § 74.1203, provides for the Commission to immediately shut down FM translator and booster stations, which are secondary, if they cause any actual impermissible interference. We seek comment on whether similar provisions should apply to LP100 and microradio stations if authorized as secondary services.

H. Applications

91. *Electronic Filing*. We are proposing to require that LPFM and microradio applications be filed electronically.[103] We intend that a substantial number of people would be able to locate and afford to construct LP1000 and LP100 stations, and would expect that an even greater number would be able to do so for microradio stations. Moreover, we have seen concrete evidence of significant interest from members of the public who want to start their own LPFM and microradio stations. As a result, we expect to receive a great number of applications, should the new service be authorized. For each application, the Commission would have to determine whether the frequency requested is available and whether it is mutually exclusive with any other application. In order to speed the introduction of this service to the listening public, it is critical that we have the capacity to process the applications promptly and efficiently.

92. We note that internet access is becoming more common, and that interested parties will almost certainly have access to the internet at their homes, public libraries, or other publicly accessible places. We seek comment on both the utility and propriety of a mandatory electronic filing system for LPFM and microradio, taking these factors into consideration, as well as the effect of such a system in promptly determining, and perhaps avoiding, mutual exclusivity of applications, as further discussed below. We seek information from commenters regarding the experiences in other services which have adopted electronic filing, particularly the availability of internet access for electronic filing and the reliability of the process, and their view of the relevance of that experience to what we have proposed here and the likely applicants for LPFM channels.

93. We receive some guidance in this determination from our experience with low power

[103] We have recently announced that we will require electronic filing of full-power FM applications. *Non-Technical Broadcasting Streamlining R&O*.

television. This new service was first contemplated in 1978 when a *Notice of Inquiry* was issued.[104] When we subsequently proposed LPTV rules in 1980, we also established procedures for filing applications through the end of the rule making process, and began accepting and processing such applications while the proceeding was still pending.[105] However, by 1984, despite the establishment of a partial filing freeze on LPTV applications, a backlog of 37,000 applications had been accumulated, the overwhelming majority of which were mutually exclusive.[106] The difficulties encountered in resolving the mutual exclusivities greatly hampered the nationwide introduction of this new service, and stations were slow to build even once they were authorized to do so. By 1986, while 1,675 LPTV stations had been authorized, only a fraction of those had actually been constructed.[107]

94. However, in the intervening period, technology for electronic filing has developed which can ameliorate this potential problem. Electronic filing has already been instituted for other services, and it has been authorized by the Commission for broadcast services.[108] For low power and microradio services, such a system could represent tremendous savings in personnel for the Commission and a concomitant increase, by several orders of magnitude, in the speed of delivery of new service. Without electronic filing, the Commission lacks the resources to promptly accomplish the necessary data entry for hundreds or thousands of LPFM (and, possibly, microradio) applications.

95. Accordingly, we propose to develop an electronic filing system for LPFM (and microradio) whereby applicants would submit their applications by e-mail. We may be able to develop a system whereby the application could first be analyzed against existing facilities and, perhaps, even against previously filed applications. Such a system could then promptly inform the filer whether the requested frequency is available and if the application is acceptable for filing based on current data. If we use a window filing system for low power applications, the system could allow an applicant to avoid submitting a conflicting application and thus avoid mutual exclusivity and the delay which resolving such exclusivity might entail. The system could not, of course, alert an applicant as to subsequently filed mutually exclusive applications, but reducing conflicting applications, even if not eliminating them altogether, could significantly assist the roll out of any new low power service.[109] With respect to subsequently filed

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[104] *Notice of Inquiry* in BC Docket No. 78-253, 68 FCC 2d 1525 (1978).

[105] *Notice of Proposed Rule Making* in BC Docket No. 78-253, 82 FCC 2d 47 (1980); *Interim Processing Order* 48 RR 2d 291 (1980).

[106] *See Notice of Proposed Rule Making* in MM Docket No. 86-286, 104 FCC 2d 1368 (1986).

[107] *Id*.

[108] *Non-Technical Broadcasting Streamlining R&O*.

[109] We would treat LPFM and microradio stations the same as full power FM stations for the purposes of the "quiet zones" established in Section 73.1030 of the Commission's rules, 47 C.F.R. § 1030. The rule defines a protected area around the National Radio Astronomy Observatory site located at Green Bank, Pocohantas County,

mutually exclusive applications, we could attempt to devise a system whereby all applications filed during a particular window are analyzed in a batch, with the resulting mutually exclusive applications identified and posted on a web page. As a further benefit, even if pending applications cannot be instantaneously added to the data base and available for comparison, an applicant would not have to hire an engineer to determine which frequencies were available based on existing authorizations. Moreover, the filing system could also be designed to assist applicants in determining HAAT or appropriate derating of permissible transmit power. This could be particularly important for applicants that might not otherwise have the finances to enter broadcasting. Parties wishing to operate LPFM (or microradio) facilities would benefit substantially, and the public would receive service far earlier than it would otherwise.

96. *Filing Windows/Mutual Exclusivity*. We are proposing to adopt a processing system with short windows of only a few days each for the filing of applications. We ask for comment on whether this would have advantages over longer windows and over a first-come, first-serve procedure. We also request comment on the optimal duration of any window that might be adopted.

97. We expect that short filing windows would lessen the occurrence of mutually exclusive applications and speed service to the public. We are concerned, however, about whether short filing windows would result in a flood of applications in a short period that would be so great as to overwhelm any filing system we might be reasonably able to devise.

98. We note that electronic filing might give us the capacity to ascertain the precise sequence in which applications are submitted by different parties. This would allow us to use a first-come, first-serve filing system, thereby preventing the accumulation of numerous mutually exclusive applications. However, as discussed below, such a system may have costs, limitations, and inequities that might be avoided by the use of filing windows.

99. Establishment of a first-come process would be dependent on the ability of a system to immediately add application information to its database and process application information very quickly. A primary intended benefit of a first-come, first-serve electronic filing system would be that a party filing an application mutually exclusive with one filed even a moment earlier could be rejected as unacceptable for filing. Depending on the number and timing of LPFM and microradio applications received, such a process might avoid imposing a considerable burden and expense on the Commission and the applicants, and very greatly speed the initiation of new service. However, we are not certain at this point that a system could be constructed which would handle the large volume of applications in a short period of time that might result from this rule making and such a filing priority. Users might then have to wait in a long processing queue while the system processes previously submitted applications. Such a queue would not prevent us from determining the exact time or sequence that an application was submitted. However, potential applicants would lose the significant advantage over filing windows of immediately knowing whether their applications are acceptable for filing. In addition, the processing queue might continue to

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West Virginia and at the Naval Radio Research Observatory at Sugar Grove, Pendleton County, West Virginia. Section 73.1030(b) defines a protected area around the Table Mountain Radio Receiving Zone, Boulder County, Colorado. Section 73.1030(c) defines protected areas around Commission monitoring stations.

grow longer and longer, despite the fact that applications at the front were being processed expeditiously. This would likely serve only to frustrate applicants who might have to wait for extremely long periods of time without knowing if their applications were acceptable for filing. With a filing window, however, the Commission could choose to accept new LPFM applications only once all of the previously-filed ones had been fully processed, thereby shortening the period of time that members of the public might have to wait to learn the status of their applications.

100. We also recognize that internet service is less convenient or immediately available for some potential applicants than for others, and that internet providers are sometimes erratic. This could result in inequities to some applicants that are disadvantaged by a poor internet connection, and we would have to weigh this concern against the potential benefits of such a process to applicants in general and to the public. Our consideration of this matter would include our statutory "obligation in the public interest to continue to use engineering solutions, negotiation, threshold qualifications, service regulations, and other means in order to avoid mutual exclusivity in application and licensing proceedings." 47 U.S.C. § 309(j)(6)(E).

101. Therefore, commenters should address whether it would be more practical and equitable for applicants or would better serve the listening public to use filing windows, as proposed, to determine application priority and mutual exclusivity. Mutually exclusive applications filed within the relevant time period would be resolved by whatever legal method we determine would best serve the public interest, subject to statutory constraints.[110] At the end of the filing window, the Commission would notify all parties whose applications are mutually exclusive. We are concerned that a longer filing window would also increase the number of mutually exclusive applications filed. If such mutual exclusivity is resolved by auction (a possibility that is discussed below), many of the primary beneficiaries of the new low power radio service might not be able to afford a station.

102. We note our concern that while a strict first-come system might result in an initial crush of applications that could overload any system we devise, a window period might only delay the same onslaught of applications until the end of the window period. We seek comment on this concern, including the extent to which experience in other recent new services, such as low power television, can be considered relevant in light of an electronic filing system. Also, we ask commenters to suggest whether and why the ability to use the electronic filing system to search for available channels would diminish the number of mutually exclusive applications filed under a system of consecutive, fairly short window periods, at least until only one channel remains. In addressing this issue, commenters should assess the likelihood and extent that a first-come, first-serve procedure would provide for a prompt and far less burdensome initiation of service. Commenters should also address the relative equities or other benefits of a window filing system. We seek comment not only on the appropriate window, if any, for determining mutually exclusive applications in the context of electronic application filing, but also on the appropriate filing window(s) in the absence of an electronic filing system.

[110] In other radio and television broadcast services, the Commission accepts construction permit applications only during specified filing windows, as determined by the staff. Our LPFM proposal is similar.

103. *Resolving Mutually Exclusive Applications*. Both petitions for rule making propose the use of lotteries to resolve mutual exclusivity among applications, with Skinner specifically referring to the lottery method previously used to award low power television licenses. Many other commenters, especially individuals from outside the industry, oppose the use of auctions to resolve mutually exclusive applications and agree with petitioners' lottery advocacy or suggest methods to reduce the occurrence of mutually exclusive applications, such as a letter-perfect application standard or first-come processing.[111] Opponents of the low power radio petitions assert that the Balanced Budget Act of 1997 appears to mandate auctions if we must resolve mutually exclusive applications for microbroadcasting.[112]

104. We tentatively conclude that auctions would be required if mutually exclusive applications for commercial LPFM facilities were filed. Section 3002(a)(1) of the Balanced Budget Act of 1997 specifically amended the Commission's auction authority under Section 309(j) of the Communications Act to include commercial broadcast applicants for the first time. Amended Section 309(j) provides that, except for licenses for certain public safety noncommercial services and for certain digital television services and noncommercial educational or public broadcast stations, "the Commission shall grant the license or permit to a qualified applicant through a system of competitive bidding . . . [i]f . . . mutually exclusive applications are accepted for any initial license or construction permit." Balanced Budget Act of 1997, § 3002(a)(1), *codified as* 47 U.S.C. § 309(j). In addition, Section 3002(a)(2), *codified as* 47 U.S.C. § 309(i), amends Section 309(i) to terminate the Commission's authority to issue any license through the use of a system of random selection after July 1, 1997, except for licenses or permits for stations defined by Section 397(6) of the Communications Act (*i.e.*, noncommercial educational or public broadcast stations).

105. The *First Report and Order* in MM Docket 97-234, 13 FCC Rcd 15920 (1998) ("*Auctions Order*") sets the standards for auctions for broadcast stations. That document discusses the applicability of auctions to secondary services not mentioned in the Balanced Budget Act of 1997, such as FM translators, and concludes that the list in the Act is illustrative, not exhaustive. *Id.* at 15924. However, there is no discussion of the applicability of the auction requirement to newly created services such as the ones we are exploring in the instant case. Commenters are welcome to address whether these low power and microradio stations could be excluded from the auctions requirement of Section 309(j) consistent with legislative intent, and what other method we have the legal authority to use to resolve mutual exclusivity when it arises.

106. We note in this connection that under Section 309(j)(6)(E) of the Act, the Commission has the "obligation, in the public interest, to continue to use engineering solutions, threshold qualifications, service regulations, and other means in order to avoid mutual exclusivity in application and licensing proceedings." We agree with those commenters that, considering the nature of this service, especially the extremely low power involved for LP100 and microradio service, we have an obligation under the Act to explore other means to avoid mutual exclusivity prior to ordering competitive bidding for the LPFM

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[111] *See, e.g.*, CRC Petition for Rule Making at 6.

[112] *E.g.*, Press Comments at 5.

licenses. We seek comment on the various methods we could use to avoid mutual exclusivity in this service, including the strict first-come procedure that could be used in conjunction with electronic filing, as discussed above.

107. In the event that auctions are held to resolve mutually exclusive applications, the Mass Media Bureau and Wireless Telecommunications Bureau, pursuant to delegated authority, will seek comment on and establish an appropriate auction design methodology prior to the auction.[113] We seek comment on alternatives or modifications to the auction procedure which could promote localism and community involvement by low power and microradio stations. The *Auctions Order* sets forth new filing requirements which replace the previous filing procedures with a specific time period, or auction window, during which all applicants seeking to participate in an auction must file their applications.[114] Prior to any broadcast auction, the Bureau will release, pursuant to delegated authority, an initial public notice announcing an upcoming auction and specifying when the window for filing to participate in the auction will open and how long it will remain open.[115] Initially, prospective bidders will electronically file a short-form application, along with any engineering data necessary to determine mutual exclusivity in a particular service.[116] Once the auction is completed, a long-form application will be filed.[117] We seek comment on the extent to which these procedures are appropriate for this new service and, specifically, how they could be modified to accommodate a first-come, first-serve filing procedure, if we choose to utilize one.

108. Licenses for noncommercial stations are specifically exempted from auction by the statute. 47 U.S.C. § 309(j)(2)(C). In the event that we decide to classify all LPFM stations or those in the noncommercial part of the band (channels 201-220) as noncommercial, as discussed above, we seek comment on the appropriate selection methodology for applications for such channels that are mutually exclusive. We note that the Commission has the authority to resolve mutually exclusive noncommercial broadcast applications by lottery. 47 U.S.C. § 309(i). We also seek comment on the appropriate procedure to resolve mutual exclusivity between commercial and noncommercial applications, should the occasion arise. In a *Further Notice of Proposed Rule Making* in MM Docket No. 95-31, 13 FCC Rcd 21167 (1998), we explored possible selection criteria and procedures for noncommercial educational applicants for full-power FM service, and commenters are invited to address the issues raised in that *Further Notice.* To the extent that suggestions in this proceeding differ from the comments submitted in response to that *Further Notice*, commenters should provide a rationale for disparate treatment of

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[113] *See Auctions Order* at 15967-68.

[114] *Id*. at 15972-73.

[115] *Id*. at 15973.

[116] *Id*. at 15974-76, 15977.

[117] *Id*. at 15984.

full-power and low power applicants.

I. International Notification

109. The 1991 Canada-USA FM Broadcasting Agreement provides for low power FM stations. Under the terms of the Agreement, stations would be permitted to operate with a maximum of 250 watts ERP and a 34 dBu F(50,10) interfering contour not to exceed 60 km. They would be secondary services and would be coordinated only if the interfering contour crosses the common border. LP100 and microradio would be coordinated under these regulations as needed. There are currently no provisions in the Canada-USA FM Agreement to provide for primary low power service of 1 kW, as is proposed for LP1000 service. Accordingly, such stations would have to be coordinated with Canada under the 6 kW Class A specification unless and until alternative provisions are adopted.

110. The 1992 USA-Mexico FM Broadcast Agreement also provides for low power FM stations. Under the terms of this Agreement, a station would be permitted to operate with specific parameters depending on the station's distance from the common border. Stations which are less than 125 km from the common border may operate with a maximum of 50 watts ERP, an interfering contour not to exceed 32 km, and a protected 60 dBu F(50,50) contour not to exceed 8.7 km in the direction of Mexico. Stations which are greater than 125 km from the common border may operate with greater than the above parameters in the direction of Mexico provided that the protected contour does not extend greater than 8.7 km, starting from the 125 km point. Microradio stations would fall under the above criteria, and LP100 stations would require possible restrictions on domestic standards in order to abide by the above regulations for coordination purposes with Mexico. There are currently no provisions in the USA-Mexico FM Agreement to provide for primary low power service of 1 kW, as is proposed for LP1000 service. These stations would have to be coordinated with Mexico under the 3 kW Class A specification, unless and until alternative provisions are adopted.

111. Under both the Canada and Mexico FM Agreements, low power and microradio stations operate on the basis of not causing interference to existing and future primary assignments. These low power stations receive protection according to their date of notification and acceptance only from future low power assignments.

IV. SUMMARY

112. With this *Notice of Proposed Rule Making*, we explore the possible establishment of new classes of FM radio service to respond to the increasing demand by the public for additional outlets of popular expression which could increase the diversity of voices, views, and sources of information and entertainment available to the American public. This proceeding will explore the appropriate technical parameters for such a service. We will also examine potentially conflicting demands for such a service and the means to accommodate any such conflicting demands to the extent possible and appropriate. In addressing these issues, we are and will remain mindful of the technical requirements necessary to protect existing radio services and are concerned with preserving the excellent technical quality of radio service available today which has been fostered and maintained by our existing rules. We hope to receive comment from a wide range of existing and potential users of the FM spectrum regarding the nature and extent of different and possibly conflicting demands for this spectrum, and technical analysis to assist us in

best resolving those conflicts for the benefit of the public.

V. ADMINISTRATIVE MATTERS

113. *Paperwork Reduction Act of 1995 Analysis*. This *Notice* proposes the creation of a new, low power FM radio broadcast service. Implementation of this service (*e.g.*, issuing construction permits, granting license assignment applications) may involve an information collection requirement. We estimate that at least several hundred parties may apply to construct LPFM facilities, and we may in the future receive numerous license renewal and sales applications. In addition, depending on the rules ultimately adopted, at least some licensees may be required to complete several forms that full power radio broadcasters submit, such as Forms 323 and 323-E (Ownership).

114. As part of our continuing effort to reduce paperwork burdens, we invite the general public and the Office of Management and Budget ("OMB") to take this opportunity to comment on the information collection that might be required, as required by the Paperwork Reduction Act of 1995, Pub. L. No. 104-13. Public and agency comments are due at the same time as other comments on this *Notice* (*i.e.*, April 12, 1999); OMB comments are also due April 12, 1999. Comments should address: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology. In addition to filing comments with the Secretary, a copy of any comments on the information collections contained herein should be submitted to Judy Boley, Federal Communications Commission, Room C-1804, 445 12th Street, SW, Washington, DC 20554, or via the Internet to jboley@fcc.gov and to Timothy Fain, OMB Desk Officer, 10236 NEOB, 725 17th Street, N.W., Washington, DC 20503 or via the Internet to fain_t @al.eop.gov.

115. *Filing of Comments and Reply Comments*. Pursuant to Sections 1.415 and 1.419 of the Commission's rules, 47 C.F.R. §§ 1.415, 1.419, interested parties may file comments on or before April 12, 1999, and reply comments on or before May 12, 1999. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS) or by filing paper copies. *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 Fed. Reg. 24,121 (1998).

116. Comments filed through the ECFS can be sent as an electronic file via the Internet to <http://www.fcc.gov/e-file/ecfs.html>. In completing the transmittal screen, commenters should include their full name, Postal Service mailing address, and the applicable docket or rulemaking number. Parties may also submit an electronic comment by Internet e-mail. To get filing instructions for e-mail comments, commenters should send an e-mail to ecfs@fcc.gov, and should include the following words in the body of the message, "get form <your e-mail address>." A sample form and directions will be sent in reply.

117. Parties who choose to file by paper must file an original and four copies of each filing. All filings must be sent to the Commission's Secretary, Magalie Roman Salas, Office of the Secretary, TW-A306, Federal Communications Commission, 445 12th Street, S.W., Washington, D.C. 20554. The Mass Media Bureau contacts for this proceeding are Paul Gordon and Bruce Romano at (202) 418-2120,

or pgordon@fcc.gov or bromano@fcc.gov, or Keith A. Larson at (202) 418-2600, or klarson@fcc.gov.

118. Parties who choose to file by paper should also submit their comments on diskette. These diskettes should be submitted to: Paul Gordon, Federal Communications Commission, 445 12th Street, S.W., Room 2C223, Washington, DC 20554. Such a submission should be on a 3.5 inch diskette formatted in an IBM compatible format using WordPerfect 5.1 for Windows or compatible software. The diskette should be accompanied by a cover letter and should be submitted in "read only" mode. The diskette should be clearly labelled with the commenter's name, proceeding (including the docket number in this case (MM Docket No. 99-25), type of pleading (comment or reply comment), date of submission, and the name of the electronic file on the diskette. The label should also include the following phrase "Disk Copy - Not an Original." Each diskette should contain only one party's pleadings, preferably in a single electronic file. In addition, commenters must send diskette copies to the Commission's copy contractor, International Transcription Service, Inc., 1231 20th Street, N.W., Washington, D.C. 20036.

119. Comments and reply comments will be available for public inspection during regular business hours in the FCC Reference Center (Room 239), 1919 M Street, N.W., Washington, D.C. 20554. It is anticipated that the Reference Center will be relocated to the Commission's Portals Building during the late spring or early summer of 1999. Accordingly, and especially after March 1, 1999, interested parties are advised to contact the FCC Reference Center at (202) 418-0270 to determine its location. Written comments by the public on the proposed and/or modified information collections are due on or before April 12, 1999. Written comments must be submitted by the Office of Management and Budget (OMB) on the proposed and/or modified information collections on or before April 12, 1999. In addition to filing comments with the Secretary, a copy of any comments on the information collections contained herein should be submitted to Judy Boley, Federal Communications Commission, Room C-1804, 445 12th Street, SW, Washington, DC 20554, or via the Internet to jboley@fcc.gov and to Timothy Fain, OMB Desk Officer, 10236 NEOB, 725 - 17th Street, N.W., Washington, DC 20503 or via the Internet to fain_t@al.eop.gov.

120. *Ex Parte Rules*. This proceeding will be treated as a "permit-but-disclose" proceeding subject to the "permit-but-disclose" requirements under Section 1.1206(b) of the rules. 47 C.F.R. § 1.1206(b), as revised. Ex parte presentations are permissible if disclosed in accordance with Commission rules, except during the Sunshine Agenda period when presentations, ex parte or otherwise, are generally prohibited. Persons making oral ex parte presentations are reminded that a memorandum summarizing a presentation must contain a summary of the substance of the presentation and not merely a listing of the subjects discussed. More than a one or two sentence description of the views and arguments presented is generally required. *See* 47 C.F.R. § 1.1206(b)(2), as revised. Additional rules pertaining to oral and written presentations are set forth in Section 1.1206(b).

121. *Initial Regulatory Flexibility Analysis*. With respect to this *Notice*, an Initial Regulatory Flexibility Analysis ("IRFA") under the Regulatory Flexibility Act, *see* 5 U.S.C. § 603, is contained in Appendix E. Written public comments are requested on the IRFA, and must be filed in accordance with the same filing deadlines as comments on the *Notice*, with a distinct heading designating them as responses to the IRFA. The Commission will send a copy of this *Notice*, including the IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.

122. *Additional Information*. For additional information on this proceeding, please contact Keith A. Larson, Office of the Bureau Chief, Mass Media Bureau at (202) 418-2600, or Bruce Romano or Paul Gordon, Policy and Rules Division, Mass Media Bureau at (202) 418-2120.

VI. ORDERING CLAUSE

123. Accordingly, IT IS ORDERED that, pursuant to the authority contained in Sections 1, 4(i) and 303 of the Communications Act of 1934, as amended, 47 U.S.C. § 151, 154(i), 303, this *Notice of Proposed Rule Making* IS ADOPTED.

124. IT IS FURTHER ORDERED that the Commission's Office of Public Affairs, Reference Operations Division, SHALL SEND a copy of this *Notice of Proposed Rule Making*, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Magalie Roman Salas
Secretary

APPENDIX A

FM Radio Service Areas and Interference Protection Criteria

1. The current FM Broadcast Service consists of seven classes of licensed stations, Classes A, B1, B, C3, C2, C1, and C. (An eighth class, Class D, was discontinued in 1980, although applications for renewal and modification of these existing licenses are still accepted). Each class has specific technical and operational characteristics, such as effective radiated power ("ERP"), antenna height, and protected signal coverage area. Class A stations, the least powerful and shortest range of all the classes, have a maximum power limit of 6 kW and, when using maximum power, a Class A station may not use an antenna at a height greater than 100 meters (328 feet). (All heights are referenced to the height of the antenna above the average height of the terrain surrounding the antenna support structure ("height above average terrain" or "HAAT")). Class C stations, the most powerful and longest range of all the classes, have a minimum required ERP of 100 kW and, at that power, may not use an antenna at a height greater than 600 meters (1968 feet). The reference coverage area of each class of FM station is considered to be the area bounded by the 1 millivolt-per-meter (1 mV/m) signal strength contour from the station. For Class A stations using maximum facilities, the 1 mV/m contour is a circle with a radius of 28 kilometers (17 miles) around the station antenna. For Class C stations using maximum facilities, the 1 mV/m contour is a circle with a radius of 92 kilometers (57 miles) around the station antenna. For Classes B1 and C3, the 1 mV/m contour has a radius of 39 kilometers (24 miles); for Classes B and C2, the 1 mV/m contour has a radius of 52 kilometers (32 miles); and for Class C1, the 1 mV/m contour has a radius of 72 kilometers (45 miles). (These values are derived from the Commission's F(50,50) R-6602 propagation curves. *See* 47 C.F.R. § 73.333, Figure 1; *see also* 47 C.F.R. § 73.211).

2. Each current class of FM station is afforded protection from several types of harmful interference, specifically: interference from co-channel stations, *i.e.*, stations operating on the same frequency as the protected station; interference from first-adjacent channel stations, *i.e.*, stations operating one channel higher or lower in frequency than the protected station; interference from second-adjacent channel stations, *i.e.*, stations operating two channels higher or lower in frequency than the protected station; interference from third-adjacent channel stations, *i.e.*, stations operating three channels higher or lower in frequency from the protected station; and intermediate frequency ("IF") interference, *i.e.* signals from stations offset in frequency by 10.6 and 10.8 MHz from the protected station. (FM channels are each 200 kHz wide, resulting in 1st, 2nd, and 3rd adjacency spacings of 200 kHz, 400 kHz and 600 kHz, respectively.) The 1 mV/m signal contours of Class A, C3, C2, C1, and C stations must receive 20 dB co-channel protection, 6 dB first-adjacent channel protection, and -40 dB second- and third-adjacent channel protection. (In terms of millivolts per meter, co-channel interfering signals must be no greater than 0.1 mV/m, 1st-adjacent channel signals must be no greater than 0.5 mV/m, and 2nd/3rd adjacent signals must be no greater than 100 mV/m at the service contour of the station receiving protection). The 0.7 mV/m signal contours of Class B1 stations and the 0.5 mV/m signal contours of Class B stations must receive these same degrees of protection. For IF protection, the 36 mV/m contours of all station classes are protected against the 36 mV/m interfering contours of all stations spaced +/- 10.6 and 10.8 MHz. (*See* Section 73.207 of the Commission's rules, 47 C.F.R. § 73.207, for a table of minimum permissible station-to-station separation distances generally based on these protection ratios). For full-power services, Table A of Section 73.207 (a)(1) provides minimum distance separations for same and different class channel stations and for first-, second-, and third-adjacent channel stations as well. For example, a

co-channel same class distance separation ranges from 290 kilometers (180 miles) for Class C stations, the most powerful FM stations, to 71 kilometers (115 miles) for Class A stations. Where the classes are different (*i.e.*, Class A to B), the cochannel separations range from 270 kilometers (168 miles) for Class C1 to Class C, to 142 kilometers (88 miles) for Class A to Class C3. For adjacent channels, the required separations range from 241 kilometers (150 miles) for first adjacent Class C to Class C operation, to 6 kilometers (10 miles) for third adjacent Class A to Class A operation. The Commission established this distance separation method for channel assignment in 1962. It decided that using the distance separations would be most appropriate for the optimum development of the FM service. *See First Report and Order* in Docket 14184, 40 FCC 662, 685 (1962). In developing this method, and creating a table of minimum distance separations, the Commission took an approach that would allow it to make numerous assignments, while affording stations reasonably adequate protection from harmful interference. Based on the technology available at that time, it determined by class of station the distance required to provide protected service radii. It used field strength contours and based the original separations on these. It noted that some interference was to be expected, and that the receivers of that time could operate satisfactorily in such an environment. *Id*. at 686.

APPENDIX B

This appendix sets forth the minimum distance separations between the proposed classes of low power FM stations and existing full service FM stations. The first number in each box indicates the minimum distance necessary to ensure that the low power station would not create interference. The second number corresponds to the distance necessary to ensure that the low power station would not receive interference. The tables also show what distances would be necessary for co- and first-adjacent channel low power stations to provide interference protection to each other.

Distance separations between domestic facilities were based on the sum of the protected F(50,50) contour radius and the appropriate F(50,10) interfering contour radius as calculated in accordance with 47 C.F.R. §§ 73.313 and 73.333. Full service domestic stations were assumed to operate at § 73.211 maximum facilities.[118] Low power stations were assumed to utilize the maximum defined for the proposed class. Class B stations were protected to the 54 dBu F(50,50) contour and Class B1 stations are protected to the 57 dBu F(50,50) contour. All other classes (including low power) were protected to the 60 dBu F(50,50) contour. The interfering contours were determined using the following desired-to-undesired (D/U) signal ratios: co-channel, +20 dBu; first-adjacent channel,+6 dBu; second-adjacent channel (reserved band), -20 dBu; second- and third-adjacent channel (commercial band), -40 dBu. IF (intermediate frequency) spacings were calculated to prevent overlap of the 91 dBu F(50,50) (36 mV/m) contours of both stations.

Finally, minimum distance separations were calculated for low power stations operating within 320 kilometers of the common borders with either Canada or Mexico. The spacings in the Canadian and Mexican border zones were based on the maximum protected/interfering contours of the foreign allocations vs. the interfering/protected contours of the domestic low power stations, as required by Section 5 of the Canada-United States FM Broadcasting Agreement and Section 3 of the Mexico-United States FM Broadcasting Agreement, respectively. Any low power station within 320 km of either border would require coordination with the appropriate government.

[118] Class D stations are assumed to operate with 85 watts ERP at 30 meters HAAT. This yields a 60 dBu that extends 5.4 km (just below the minimum required for a Class A station).

CLASS LP1000

Assuming 1000 watt effective radiated power (ERP)
at 60 meters antenna height above terrain (HAAT)
60 dBu F(50,50) protected contour extends 14.2 km

MINIMUM DISTANCE SEPARATION (KM) NECESSARY TO:
CAUSE NO OVERLAP/RECEIVE NO OVERLAP

Channel Class	co-	1st-	2nd- reserved band	2nd-/3rd- commercial band	IF
A	79/101	50/58	33/23	31/17	7
C3	90/128	60/74	44/27	41/18	9
B1	105/128	70/74	50/27	46/18	9
C2	103/152	73/92	57/34	54/20	13
B	137/152	95/92	71/34	67/20	13
C1	123/186	94/119	77/48	75/24	20
C	143/212	113/151	96/65	94/28	28
D	56/32	27/22	10/16	8/15	4
Other LP1000	65	35			

CLASS LP1000
WITHIN 320 KM OF THE CANADIAN BORDER

Channel Class	co-	1st-	2nd-	3rd-	IF
A1(.25/100)	90/58	48/33	25/18	21/15	4
A(6/100)	111/101	69/58	45/23	41/17	7
B1(25/100)	123/128	81/74	57/27	53/18	9
B(50/150)	137/152	95/92	71/34	67/20	12
C1(100/300)	158/186	116/119	93/48	89/24	20
C(100/600)	154/212	120/151	102/65	98/28	28

CLASS LP1000
WITHIN 320 KM OF MEXICAN BORDER

Channel Mexican Class	co-	1st-	2nd-/3rd-	IF
A(3/100)	75/90	45/51	26/16	6
AA(6/100)	79/101	49/58	31/17	7
B1(25/100)	105/128	70/74	46/18	9
B(50/150)	137/152	95/92	67/20	12
C1(100/300)	123/186	94/119	75/24	20
C(100/600)	143/212	113/151	94/28	28

CLASS LP100

Assuming 100 watts effective radiated power (ERP)
at 30 meters antenna height above terrain (HAAT)
60 dBu F(50,50) protected contour extends 5.2 km
MINIMUM DISTANCE SEPARATION (KM) NECESSARY TO:
CAUSE NO OVERLAP/RECEIVE NO OVERLAP

Channel Class	co-	1st-	2nd- reserved band	2nd-/3rd- commercial band	IF
A	47/92	36/49	30/15	29/8	7
C3	58/119	47/66	41/19	40/10	9
B1	67/119	54/66	47/19	46/10	9
C2	71/143	60/84	54/26	53/12	12
B	92/143	77/84	68/26	67/12	12
C1	91/178	80/111	74/39	73/16	20
C	110/203	100/142	93/56	93/19	28
D	24/23	13/13	7/7	6/6	4
Other LP100	24	14			

CLASS LP100 WITHIN 320 KM OF THE CANADIAN BORDER

Channel Canadian Class	co-	1st-	2nd-	3rd-	IF
A1(.25/100)	45/50	30/25	21/10	20/7	4
A(6/100)	66/92	50/49	41/15	40/8	7
B1(25/100)	78/119	62/66	53/19	52/10	9
B(50/150)	92/143	76/84	68/26	66/12	12
C1(100/300)	113/178	98/111	89/39	88/16	19
C(100/600)	118/203	106/142	99/56	98/19	28

CLASS LP100WITHIN 320 KM OF MEXICAN BORDER

Channel Mexican Class	co-	1st-	2nd-/3rd-	IF
A(3/100)	43/82	32/42	25/8	5
AA(6/100)	47/92	36/49	29/8	6
B1(25/100)	67/119	54/66	45/10	8
B(50/150)	91/143	76/84	66/12	11
C1(100/300)	91/178	80/111	73/16	19
C(100/600)	110/203	100/142	92/19	27

MICRORADIO CLASS

Assuming 1 watt effective radiated power (ERP)
at 30 meters antenna height above terrain (HAAT)
60 dBu F(50,50) protected contour extends 1.8 km
MINIMUM DISTANCE SEPARATION (KM) NECESSARY TO:
CAUSE NO OVERLAP/RECEIVE NO OVERLAP

Channel / Class	co-	1st-	2nd- reserved band	2nd-/3rd- commercial band	IF
A	34/89	31/46	29/11	28/5	5
C3	45/115	42/62	40/15	39/6	7
B1	51/115	48/62	46/15	45/6	7
C2	58/140	55/80	53/22	52/8	10
B	73/140	69/80	67/22	65/8	10
C1	78/174	75/107	73/36	72/12	18
C	97/200	94/138	93/52	92/16	26
D	11/20	8/10	6/4	6/2	2
Other Microradio	7	4			

MICRORADIO CLASS WITHIN 320 KM OF THE CANADIAN BORDER

Channel Canadian Class[119]	co-	1st-	2nd-	3rd-	IF
A1(.25/100)	27/46	22/21	20/6	19/3	2
A(6/100)	47/88	42/46	40/11	39/5	5
B1(25/100)	59/115	54/62	52/15	51/6	7
B(50/150)	73/140	69/80	66/22	65/8	10
C1(100/300)	94/174	90/107	88/36	87/12	18
C(100/600)	103/200	100/138	98/52	97/16	26

MICRORADIO CLASS WITHIN 320 KM OF MEXICAN BORDER

Channel Mexican Class[120]	co-	1st-	2nd-/3rd-[121]	IF
A(3/100)	30/78	27/38	24/4	4
AA(6/100)	34/88	31/46	28/5	5
B1(25/100)	51/115	48/62	45/6	7
B(50/150)	73/140	69/80	65/8	10
C1(100/300)	78/174	75/107	72/12	18
C(100/600)	97/200	94/138	92/16	26

[119] In accordance with the Canada-United States FM Broadcasting Agreement, Canadian Class C stations are protected to the 58 dBu contour. All other Canadian stations are protected to the 54 dBu contour.

[120] In accordance with the Mexico-United States FM Broadcasting Agreement, Mexican Class B stations are protected to the 54 dBu. Mexican Class B1 stations are protected to the 57 dBu contour. All other classes are protected to the 60 dBu contour.

[121] Pursuant to the Mexico-United States Broadcasting Agreement, both the second- and third-adjacent channel spacings are based upon a -40 dBu D/U ratio.

APPENDIX C

In Band On Channel Digital Radio Service

1. FM broadcast signals are classified as "analog" emissions, *i.e.*, an emission which is characterized by a continuum of output parameter values. All current AM stations use analog emissions, as well as the majority of TV stations, although a limited number of TV stations have commenced digital transmissions since November 1, 1998. Digital emissions, which are characterized by discrete levels of output parameter values, are gradually replacing analog emissions in a variety of communications applications because they possess several technological advantages over analog emissions which make them more useful and reliable, and the Commission is committed to facilitating this transition in an orderly and systematic manner.[122] On October 9, 1998, a petition for rule making was filed with the Commission by USA Digital Radio Partners, L.P. ("USADR"), requesting the initiation of a proceeding to amend Part 73 of the Rules to permit the introduction of digital audio broadcasting in the AM and FM radio services. A full discussion of this petition is beyond the scope of this *Notice*. However, because the petition raises important issues concerning the interference protection criteria used in the FM band, we are addressing aspects of this issue now, at least preliminarily, in conjunction with our proposals to create two new FM station classes and to consider a microradio service. *See* paragraphs 0-0 in the *Notice*, above. This Appendix provides some details of USADR's proposal.

2. USADR proposes the introduction of digital signals on the FM band using a technique whereby a station would transmit both its analog signal and two digital signals of lesser amplitude, one on each side of the existing FM signal. (Other systems in development of which we have cognizance would use a similar signal configuration). This arrangement is commonly called "in-band, on-channel," or IBOC. Using IBOC, the two digital signals would be positioned on frequencies slightly offset above and below the frequency modulated signal and would be sufficiently suppressed in magnitude so that they would fit within the emission mask currently required for all FM stations. Using this configuration, USADR argues that digital signals could be introduced into the FM band without disrupting the reception of FM signals or amending the current station-to-station interference protection criteria. USADR envisions that this dual transmission mode, which they refer to as the "hybrid mode," would be initiated in the next few years and would continue for a number of years, eventually being replaced by an "all-digital mode," when the analog FM signal would be eliminated and the power of the 2 digital channel-edge signals would be significantly increased.

3. USADR states that it has conducted analyses of its proposed system which "verify that restricting the digital carriers to the 70 kHz region between 129 and 199 kHz from the center frequency on either side of the analog spectrum minimizes interference to the host analog and adjacent channels without exceeding the existing FCC spectrum mask."[123] In USADR's study of the interference impact of their

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[122] For example, the fidelity of digital audio recordings typically surpasses that of analog recordings, but this extra fidelity can be degraded or lost if the digital recording is transmitted by a station using an analog, rather than digital, emission. The comparative fidelity of the two emissions, given identical audio inputs, is a function of their relative bandwidths and other factors, as well as the quality of the listener's receiver and the strength of the signal.

[123] USADR Petition, Appendix C at 8

hybrid and all-digital configurations on the existing FM station environment, and the interference impact of existing stations on the USADR system, it found that its system could be implemented without disrupting regular FM analog service and without suffering significant interference from FM analog service.[124] The relevant issues from that study which impact this *Notice* are the effects arising from second- and third-adjacent channel interference, as we have not considered and are not proposing to permit any of the new classes of stations to cause co-channel or first-adjacent channel interference beyond those limits already applying to existing classes of FM stations.

4. With respect to third-adjacent channel interference, the USADR petition states: "Because of the design of the USADR IBOC system, digital reception is essentially not susceptible to third-adjacent channel interference; nor is IBOC likely to increase the potential for causing such interference to analog stations."[125] In its comments, NAB argues that, because an IBOC system will add new energy around host analog signal, effectively widening this signal to some degree, it will increase the potential for an IBOC station to interfere with the reception of the analog signal from a third-adjacent channel station. They conclude that "[a]llowing third-adjacent channel stations to move closer together would increase the signal strength of third-adjacent channel interfering stations with respect to the signal strength of a desired station and would thus increase the potential for this interference to occur. For this reason, third-adjacent channel spacing requirements cannot be modified."[126] Because no comprehensive operational test data is available for any form of IBOC system configuration, we do not know whether USADR or NAB is correct. We note that we are not proposing to alter the third-adjacent channel protection requirements between any of the existing classes of FM stations. Thus, under the proposals within this *Notice* concerning third-adjacent channels, the potential for interference would be from IBOC stations *to* the reception of analog LP1000, LP100, and microradio stations. This problem would present a minimal hinderance (or no hinderance at all, if USADR is correct) because the slight amount of additional noise caused by the digital signal within the third-adjacent channel would produce only a very marginal, if any, degradation of the received FM signal. Third-adjacent channel interference *from* LP1000, LP100, and microradio stations would be obviated by the significantly restricted occupied bandwidth and correspondingly tightened spectral mask we discuss for these stations.

5. USADR and NAB also address the issue of second-adjacent channel interference. NAB states that "second-adjacent channel interference is the primary challenge facing IBOC designers."[127] The NAB's diagrammatic representations of second-adjacent signal magnitudes and spacings clearly indicate that the most important second-adjacent channel interference consideration would involve IBOC-to-IBOC interference, because the upper digital sideband of the victim signal is almost directly adjacent to the lower

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[124] *Id*., Appendix E

[125] *Id*., Appendix D at 3

[126] NAB Comments at 23-24. Based on Figure 7 (page 24), it appears that the amount of third-adjacent channel digital energy which could cause interference within the victim receiver's FM analog channel is *extremely* small, and, in all likelihood, below the noise floor of the receiver.

[127] *Id*. at 22.

digital sideband of the interfering signal.[128] NAB does not provide any analysis evaluating IBOC-to-FM or FM-to-IBOC second-adjacent interference. In the context of the current FM radio interference standards, USADR addresses the issue of second-adjacent FM interference to an IBOC signal, stating: "An analog second-adjacent interferer will have a negligible effect on the performance of the digital signal, since it does not overlap in frequency with the desired digital signal."[129] USADR also addressed the issue of second-adjacent IBOC interference to FM signals, noting that the digital sidebands of the hybrid and all-digital IBOC second-adjacent signals fall well outside the victim FM channel, and saying that "as a result, the [interference] effects of second-adjacent hybrid and all-digital IBOC signals [to FM signals] should be negligible."[130] We invite comment in this regard and the submission of relevant measurement data.

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[128] *Id*. at 21.

[129] USADR Petition, Appendix E at 22.

[130] *Id*. at 67.

APPENDIX D

Spectrum Availability Analysis

To investigate the feasibility of a low power radio service, we conducted spectrum availability analyses for sixty communities of various sizes throughout the United States. Twenty cities were chosen within each of three population "tiers." The first tier consisted of cities with populations of more than 500,000 persons; the second tier, cities with populations between 200,000 and 500,000 persons; and the third tier, cities with populations between 50,000 and 200,000 persons.[131]

Grids. We established a uniform distribution of study locations centered on each city by overlaying a coordinate grid consisting of grid cells of a size one minute latitude by one minute longitude. Throughout much of the country, a one minute variation in longitude is slightly less than one mile and a one minute variation in latitude is slightly more than one mile. The study locations correspond to where the grid lines intersect. For Tier 1 and Tier 2 cities, the grid extended 30 minutes a side. This yields a total of 961 intersections (study locations). For Tier 3 cities the grid extended 20 minutes on each side, yielding a total of 441 study locations.

Interference with respect to other services. At each study location, we determined whether or not a proposed low power FM station could operate on each of the 100 FM channels without causing or receiving objectionable interference.[132] We based these determinations entirely on minimum distance separation tables. In all cases, we used the larger of the two spacing requirements set forth in Appendix B. We applied these separation requirements to all full service FM licensed facilities, construction permits, pending applications, and vacant allotments.[133] Additionally, low power FM stations operating in the reserved band (channels 201-220) or on channel 253 were required to provide protection to nearby TV channel 6 stations.[134] Additionally, in one of the studies, LP100 stations were restricted from causing or receiving interference with respect to FM translators.[135]

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[131] Population figures were based upon the 1996 U.S. Census estimates.

[132] This protection criterion differs somewhat from the criteria proposed in this *Notice*. Specifically, the *Notice* proposes a secondary status for LP100 stations, which means that they would not be protected against interference received. Thus, our analysis, which assumes full protection against interference received by the low power station, may significantly underestimate the number of low power stations that could be assigned if they were permitted to receive interference.

[133] These studies were based upon the Mass Media Bureau's FM Engineering Database as of December 9, 1998. Subsequent staff actions or application filings could alter the results of this analysis.

[134] We used the TV channel 6 spacing requirements listed in the FM translator rules, 47 C.F.R. § 74.1205(a), for stations in the reserved band. We required low power stations operating on channel 253 in Zone I to be spaced at least 16 kilometers from TV channel 6 stations and those in Zone II to be spaced at least 20 kilometers.

[135] Because FM translator stations are not specified by class, we provided protection to and from translators in accordance with the following table based on the translator's ERP and HAAT in the azimuth towards the LP100 station.

Interference between low power stations. Our model provided interference protection between co-channel or first-adjacent channel low power stations.[136] Because of this, some stations are precluded from assignment solely because of previously assigned low power stations. Thus, the grid location assigned to a station becomes an important factor in its preclusive effect on the assignment of other co-channel and first-adjacent channel low power stations within the grid. For example, a channel 202 assignment near the center of the grid may preclude any other channel 202 station from being assigned, whereas two or perhaps four channel 202 stations could be assigned if they were located at the corners of the grid.

Assignment methodology. For each of the 100 FM frequencies, the analysis program determines which grid points are precluded because of interference considerations with respect to other services as described above. For each grid location available for a frequency assignment (*e.g.*, channel 202), the program determines how many assignments on other available co-channel (channel 202) and first-adjacent channel (channels 201 and 203) grid locations would be precluded by this assignment. The program repeats this process for each available grid location, recording the preclusive effect until all available locations have been considered. Then the assignment process begins. The program makes assignments at the most preclusive grid locations. Between equally preclusive locations, the location nearest the center of the grid is selected. We selected the most preclusive locations, rather than the least preclusive locations, in our analysis for several reasons. First, we wanted a realistic, rather than an overly optimistic assessment of the spectrum available for this proposed service. Also, transmitter sites will most likely be selected based on coverage considerations, not preclusion considerations. Finally, a great many of the grid locations theoretically available for a low power station will, in fact, not be available due to a variety of environmental considerations (*e.g.*, zoning restrictions, proximity to airports, swamps, rivers or water, etc.).[137]

FM Translator 1 mV/m contour distance (km)	LP100 co-channel (km)	LP100 1st-adjacent channel (km)	LP100 2nd/3rd-adjacent channel (km)	LP100 IF Channel (km)
13.3 or greater	67	35	21	5
Greater than 7.3 but less	51	26	14	4
7.3 or less	30	16	8	5

[136] We used the minimum distance separations listed in Appendix B. The model did not provide any 2nd- or 3rd-adjacent channel protection between low power stations. No studies were made mixing LP1000 stations with LP100 stations. Similarly, no studies were made involving microradio stations.

[137] In several cities located in coastal areas or bordering on large bodies of water, the program excludes from consideration grid points likely to be over water.

APPENDIX E

Initial Regulatory Flexibility Analysis

As required by the Regulatory Flexibility Act (RFA),[138] the Commission has prepared this Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities by the policies and rules proposed in the present *Notice of Proposed Rule Making*. Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the IRFA provided above in paragraph 0. The Commission will send a copy of the *Notice*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration. *See* 5 U.S.C. § 603(a). In addition, the *NPRM* and IRFA (or summaries thereof) will be published in the *Federal Register*. *See id*.

Need For and Objectives of the Proposed Rule Changes:

The Commission received petitions for rulemaking asking for the creation of a low power radio service. Because they raised similar or identical issues, the Commission coordinated its responses to them. The Commission released Public Notices of its receipt of three of the proposals and invited public comment on them.

In response to significant public support, the Commission is now proposing to create a new, low power FM service. Specifically, it is proposing two classes of LPFM service, a 1000-watt maximum class ("LP1000") and a 100-watt maximum class ("LP100"). We are also asking whether to create a third class (called "microradio"), which would have a maximum power output of one to ten watts. Because of the predicted lower construction and operational costs of LPFM stations as opposed to full power facilities, we expect that small entities would be expected to have few economic obstacles to becoming LPFM licensees. Therefore, this proposed new service may serve as a vehicle for small entities and under-represented groups (including women and minorities) to gain valuable broadcast experience and to add their voices to their local communities.

Legal Basis:

Authority for the actions proposed in this *Notice* may be found in §§ 4(i) and 303 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303.

Description and Estimate of the Number of Small Entities to Which the Rules Would Apply:

The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules, if adopted.[139] The RFA generally defines the

[138] *See* 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. § 601 *et. seq.*, has been amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) (CWAAA). Title II of the CWAAA is the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA).

[139] 5 U.S.C. § 603(b)(3).

term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."[140] In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.[141] A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).[142] A small organization is generally "any not-for-profit enterprise which is independently owned and operated and is not dominant in its field."[143] Nationwide, as of 1992, there were approximately 275,801 small organizations.[144] "Small governmental jurisdiction" generally means "governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than 50,000."[145] As of 1992, there were approximately 85,006 such jurisdictions in the United States.[146] This number includes 38,978 counties, cities, and towns; of these, 37,566, or 96 percent, have populations of fewer than 50,000.[147] The Census Bureau estimates that this ratio is approximately accurate for all governmental entities. Thus, of the 85,006 governmental entities, we estimate that 81,600 (91 percent) are small entities.

The Small Business Administration defines a radio broadcasting station that has $5 million or less in annual receipts as a small business.[148] A radio broadcasting station is an establishment primarily engaged in broadcasting aural programs by radio to the public.[149] Included in this industry are commercial,

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[140] 5 U.S.C. § 601(6).

[141] 5 U.S.C. § 601(3) (incorporating by reference the definition of "small business concern" in 15 U.S.C. § 632). Pursuant to the RFA, the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register." 5 U.S.C. § 601(3).

[142] Small Business Act, 15 U.S.C. § 632 (1996).

[143] 5 U.S.C. § 601(4).

[144] 1992 Economic Census, U.S. Bureau of the Census, Table 6 (special tabulation of data under contract to Office of Advocacy of the U.S. Small Business Administration).

[145] 5 U.S.C. § 601(5).

[146] U.S. Dept. of Commerce, Bureau of the Census, "1992 Census of Governments."

[147] *Id.*

[148] 13 C.F.R. § 121.201, SIC code 4832.

[149] 1992 Census, Series UC92-S-1, at Appendix A-9.

religious, educational, and other radio stations.[150] The 1992 Census indicates that 96 percent (5,861 of 6,127) radio station establishments produced less than $5 million in revenue in 1992. Official Commission records indicate that 11,334 individual radio stations were operating in 1992.[151] As of December 31, 1998, Commission records indicate that 12,472 radio stations were operating, of which 7,679 were FM stations.[152]

The proposed rules, if adopted, would apply to a new category of FM radio broadcasting service. For the proposed service, the number of stations that could be licensed without causing unacceptable interference would depend on the interference criteria that we will apply to the various classes of low power radio service. Should we determine that second- and/or third-adjacent channel interference protection would not be necessary to prevent unacceptable interference to full power stations, then far more LPFM facilities could be authorized. The number of stations that we could authorize is also dependent upon the ratio of LP1000, LP100, and microradio stations for which we would accept applications. For instance, the greater the number of LP1000 stations, the less spectrum would remain available to accommodate other LPFM facilities. This, in turn, would affect how many new stations would be available to small entities.

The number of entities that may seek to obtain a low power radio license is currently unknown. We note, however, that the Commission has received over 13,000 inquiries in the past year from individuals and groups interested in operating such a facility. In addition, we expect that, due to the small size of low power FM stations, small entities would generally have a greater interest than large ones in acquiring them.

We seek comment and data regarding the number of small entities that may be affected by the proposed rules, if adopted.

Reporting, Recordkeeping, and Other Compliance Requirements:

The Commission is proposing to create a new broadcasting service that may allow hundreds or thousands of small entities to become broadcast licensees for the first time. This endeavor would require the collection of information for the purposes of processing applications for (among other things) initial construction permits, assignments and transfers, and renewals. Given the power levels and purposes of LP1000 stations (such as their potential to be an entry-level radio service), we would likely require the same or similar reporting, recordkeeping, and other compliance requirements as full power radio broadcasters. However, recognizing that LPFM 100 and microradio licensees may be small, inexperienced operators who would be serving fairly limited areas and audiences, we intend to keep this service as simple as possible. Accordingly, we intend to keep reporting, recordkeeping, and other compliance requirements to a minimum. The *Notice* seeks comment on these issues, including comment specifically directed toward

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[150] *Id*. The definition used by the SBA also includes radio broadcasting stations which also produce radio program materials. Separate establishments that are primarily engaged in producing radio program material are classified under another SIC number, however. *Id*.

[151] FCC News Release, No. 31327 (Jan. 13, 1993).

[152] FCC News Release, "Broadcast Station Totals as of December 31, 1998" (Jan. 25, 1999).

the possible effects of such requirements on small entities.

Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered:

We are proposing a low power radio service that is divided into subclasses, defined by their power output (in watts): LP1000 and LP100. We are also requesting comment on a possible microradio class of 1-10 watts. With this subdivision, small entities would be able to apply for stations in the class that is most appropriate for their interests and their ability to construct and operate a station. The *Notice* asks for comment on the proposed classes and asks whether an alternative system would better serve the public interest.

The *Notice* proposes ownership rules intended to assist small entities construct or acquire LPFM stations. Parties with attributable interests in any full power broadcast facilities would not be eligible to have any ownership interest in any low power radio stations; this would prevent large group owners (or even large single-station owners) from constructing and operating LPFM facilities that might otherwise be available to small entities. The proposed local and national ownership restrictions of one station per community and five or ten nationwide similarly would be intended to ensure that ample LPFM stations are available for small entities. However, the ownership rules would also prohibit small entity full power broadcasters from acquiring LPFM licenses.

The *Notice* does not propose a local residency requirement on LPFM licensees. Regarding LP1000 stations, it notes that full power stations require neither local residency nor integration between ownership and management to assess and address local needs and interests. Such a restriction would also frustrate any attempt at achieving certain efficiencies from national multiple ownership long recognized as beneficial for full-power stations. Additionally, because the service areas for LP1000 stations will be relatively small, a potential new entrant might hold residency in a location where no LP1000 channels can be found, so such a residency requirement might frustrate one of the significant potentials of LP1000 stations. The same rationale can be applied to LP100 and microradio stations. Moreover, we expect that the nature of the service provided by the two smaller classes of stations would attract primarily local or nearby residents. The *Notice* seeks comment on these assumptions and resulting proposal.

The *Notice* requests comment on whether unlicensed operators, who have broadcasted illegally, should be considered eligible to hold LPFM licensees. Although we do not have data on this issue, we presume that most of these illegal operators are individuals, small groups, or small entities. As a result, our disposition of this issue could be of great concern to this relatively small group, should they desire to operate LPFM stations within the legal framework we are proposing. The *Notice* asks whether unlicensed operators have the requisite character qualifications to be Commission licensees. It also asks whether those who have promptly ceased operation when advised by the Commission to do so, or who voluntarily cease operations within ten days of the publication of the summary of this *Notice* in the *Federal Register*, should be considered differently in this regard.

The *Notice* also asks whether LPFM stations of each class should be subject to the variety of other rules in Part 73 with which full power stations must comply, such as the main studio rule, the public file rule, and the periodic ownership reporting requirements. Given the purposes and power levels of LP1000 stations, we tentatively conclude that LP1000 licensees should generally meet the Part 73 rules applicable to full

power FM stations. However, we seek comment on whether sufficient useful purpose would be served in applying each rule to these licensees. The *Notice* states that we would be disinclined to apply most of these service rules to microradio stations, and we particularly seek comment with regard to the rules appropriate for LP100 stations. Commenters are invited to discuss which existing rules should apply or what new or modified rules would be more appropriate. Because of the costs of complying with Commission rules, this issue could be of importance in determining whether a small entity could afford to operate an LPFM station.

The *Notice* proposes a mandatory electronic filing system, envisioning an internet-based system that would provide substantial assistance to potential applicants with little technical or legal background. For example, we may be able to develop a system that could inform a potential applicant what frequencies are available before an application is filed. The Commission notes the increasing ease of accessibility to the internet through private homes, public libraries, and other publicly accessible places. Without electronic filing, the Commission lacks the resources to promptly accomplish the necessary data entry for hundreds or thousands of LPFM (and, possibly, microradio) applications. A manual filing system might result in applicants' not learning for many months (at least) whether their applications were acceptable for filing. As a result, electronic filing would provide superior service to LPFM applicants and speed service to the public.

The Commission proposes to adopt a window filing system with short filing periods of only a few days each, and it asks commenters to address if that would have advantages over a first-come, first-served system. One of the Commission's concerns is to reduce the number of mutually exclusive applications, due to the resulting delay in service implementation, and because Section 309(j) of the Communications Act of 1934, as amended, requires mutual exclusivity between or among commercial broadcast applications to be resolved through auctions. Also, Section 309(j)(6)(E) of the Communications Act of 1934, as amended, states that the Commission has the "obligation, in the public interest, to continue to use engineering solutions, threshold qualifications, service regulations, and other means in order to avoid mutual exclusivity in application and licensing proceedings." With auctions, receiving an LPFM construction permit could become too expensive for many of the people this service is intended to serve. With regard to a first-come system, the *Notice* questions the fairness of rejecting an application as unacceptable for filing because it would be mutually exclusive with one filed only a moment earlier, possibly solely because the latter party may have had a poor internet connection.

Federal Rules that Overlap, Duplicate, or Conflict with the Proposed Rules:

The initiatives and proposed rules raised in this proceeding do not overlap, duplicate or conflict with any other rules.

JOINT STATEMENT OF CHAIRMAN WILLIAM E. KENNARD
AND COMMISSIONER GLORIA TRISTANI

As we've traveled around the country we've talked to lots of people who want to use the airwaves, to speak to their communities -- churches, community groups, elementary schools, universities, small businesses, and minority groups. They see – as we do – that the airwaves are a great natural resource, and the creation of a low power radio service could provide an effective way for more people to use this resource.

As consolidation in the broadcast industry closes the doors of opportunity for new entrants, we must find ways to use the broadcast spectrum more efficiently so that we can bring more voices to the airwaves. The *Notice* adopted today proposes several ways to do so.

As we consider the establishment of a low power radio service, we will be mindful of interference concerns. We will not undermine the technical integrity of the FM band. Our job is to be the guardian of the spectrum, not to degrade it.

And we are mindful of the conversion to digital. We are currently considering USA Digital Radio's petition to establish an in-band, on-channel digital broadcasting service and we are following the testing and development of in-band digital systems. This is a great start, and we will do our part to make sure that local radio is not left on the sidelines of the digital revolution.

However, we cannot deny opportunities to those who want to use the airwaves to speak to their communities simply because it might be inconvenient for those who already have these opportunities.

In the past, the Commission has faced incumbents raising obstacles that might impede the development of new technology. We saw this with the development of cable television service, low power television, direct broadcast satellites, and the digital audio radio service. In each instance, the Commission was able to overcome these obstacles and bring these new technologies to the American people, and in every case, the American people have benefited from new services and competition while the incumbent industry has continued to prosper.

Therefore, we ask the broadcast community to work with the Commission in developing today's proposals for a low power radio service that will coexist with the incumbent services. In this way, we can work together to maximize use of the airwaves for the benefit of the American public.

January 28, 1999

Statement
of
Commissioner Susan Ness

Re: In the Matter of Creation of a Low Power Radio Service

This Notice of Proposed Rulemaking describes three low power FM services that could provide a means to give a public voice to individuals and entities currently not able to participate in our broadcasting system. We are seeking comment on whether to authorize any or all of these new services. By doing so, we may enable students, community organizations, and those underrepresented in conventional broadcasting to provide programming of special interest to small and niche populations.

At the same time, the Commission recognizes its role, as Chairman Kennard has said, "to be the guardian of the spectrum, not to degrade it." One of the primary reasons for the agency's establishment was to avoid chaos on the airwaves. To me, there are three issues that will be in the forefront as we build a record: *first,* whether these services should be open only to noncommercial entities; *second,* whether and to what extent these services would adversely affect the potential transition of existing broadcasters from analog to digital through an "In Band On Channel" (IBOC) system; and *third,* whether the proposed services would create undue levels of interference to full power services.

We have heard from many individuals and organizations who have described in moving detail their hopes and plans for local service to their communities. Many requests emphasized their nonprofit goals which could fit very well within these low power structures. I have been particularly interested in the prospects of this service for students, having been involved with my own college radio station.

I would like to believe that this proceeding will lead us to be able to create one or more new services in which at least some of the many hopeful people we have heard from may participate. I also support the Chairman's call for more ownership opportunities for women and minorities who are finding it more and more difficult to enter broadcasting as consolidation drives up station prices and access to capital continues to be scarce for new entrants. But I underscore that those interested in low power radio must seriously assess the economic requirements of launching and sustaining a new business, whether on a commercial or noncommercial basis.

Before I am to conclude that one or more new services are feasible, I must be satisfied that the technical issues have been adequately addressed. There are real questions regarding potential adverse effects on IBOC digital service and interference protections, particularly with respect to second adjacent channels. I have long championed the development of a terrestrial digital service to enable broadcasters to make a digital conversion, should they so choose, to remain technically competitive with satellite Digital Audio Radio Service (DARS). IBOC technology appears to be almost ready for commercial application and should not be undermined or compromised by any action we take on low power FM. The record that will be developed over the next few months must provide an objective technical basis for low power FM service. We would then brighten, not tarnish, the Commission's performance in maintaining the integrity of the radio spectrum while expanding the diversity of voices, which has so enriched the airwaves over the years.

January 28, 1998

SEPARATE STATEMENT OF COMMISSIONER MICHAEL K. POWELL

Re: Notice of Proposed Rulemaking in MM Docket No. 95-25 - Creation of a Low Power FM Radio Service

I support issuance of this Notice of Proposed Rulemaking looking toward creation of low power radio service. Many have called upon us to consider a new low power class of service as a means of opening opportunities in radio broadcasting for new entrants. Others contend that authorizing low power services will facilitate "community radio" designed to serve currently unmet information needs. These are worthy goals and we should consider whether we can authorize such services.

Having said this, I want to make clear that I have some concerns about this proposal. I highlight two in particular and urge those who comment in this proceeding to focus on them. First, I urge the parties to develop a full, objective record regarding potential interference problems that might result from creation of these new classes. One very important purpose of this agency is to ensure efficient and effective use of the radio spectrum. I will be very interested in understanding the spectral ramifications of creating low power FM radio service and I intend to consider interference questions very seriously before taking final action.

My second concern relates to the impact that creation of low power service may have on potential conversion to terrestrial digital radio service. I understand that there have been promising advances of late that can enable current radio operations to convert to digital transmission technology "in band on channel." Converting to digital transmission technology could improve the quality of radio service and potentially increase spectral efficiency. These are very real benefits and I would be concerned if authorizing some or all of these low power radio services would make in band on channel conversion to digital radio unworkable for existing terrestrial services. Again, I encourage commenters to focus specifically on this issue, so that we can make a fully informed judgement.

January 28, 1999

DISSENTING STATEMENT OF
COMMISSIONER HAROLD W. FURCHTGOTT-ROTH

In re: Notice of Proposed Rulemaking, Creation of a Low Power Radio Service, MM Docket No. 99-25.

I am not opposed to the creation of a low power radio service. Whatever new service can be provided within the range of existing interference regulations would be something worth considering. I do not believe that we should create new stations at the expense of current interference protection standards, however. Were the NPRM limited to consideration of service based on the maintenance of the interference rules now set forth in our regulations, I could thus have supported its issuance.

But the NPRM is not so limited. As the appendix shows, under existing interference rules the Commission can authorize so few new stations that the results would hardly warrant the effort. In order to create any substantial amount of new service, protection standards have to be loosened so far as to eliminate third and even second adjacent channel safeguards. This is a severe incursion on the rights of current licenseholders, as well as on the value of their licenses, which will be drastically undercut in the market if these proposals are adopted. This proposal also potentially impairs the ability of current licensees to serve their listeners, who must not be forgotten; while new people may be able to broadcast, others may lose their ability to receive and listen to existing stations due to interference. It especially troubles me that the Commission has made *no* effort to assess, much less quantify, the effect on existing stations of eliminating these safeguards. In my opinion, weighing the "cons" of the proposal -- namely, the negative effects on existing stations and their audiences -- in addition to considering its "pros" is essential to the decision whether to move forward with these petitions for rulemaking.

Even if the second and third adjacent channel protections were wholly eliminated, however, very little new service would be created in the major urban markets at which this proposal is in significant part aimed. *See supra* at para. 1 ("We believe these new LPFM stations would provide a low-cost means of serving urban communities and neighborhoods. . . .). For instance, in New York city, there would be no LP1000 stations and no LP100 stations, and in Los Angeles there will be only one LP1000 station, no LP100 stations with translator protections and six LP100 stations with unprotected translators. *See Appendix D*. In addition to their small number, these services will be relatively unavailable to mobile audiences due to their low wattage.

Furthermore, while many proponents of this rulemaking see it as a means of increasing broadcast ownership by minorities and women, there is in all likelihood no constitutionally sound way to assure such a result. There is simply no way that the Commission can say that, if a first-come, first-served rule is adopted, these licenses will not be awarded to whoever applies for them first or that, in the case of mutually exclusive applications, these licenses will not go to the highest bidder.

Having thus proposed the creation of these new stations, the Commission then concludes that it should impose "strict local and cross- ownership restrictions" on them. *Supra* at para. 57. If it did so, the Commission would create a gross inconsistency with the more liberal ownership limits under section 202(b) of the Telecommunications Act of 1996. Nothing in section 202(b) suggests that it was not meant to apply prospectively (as most statutes are) to any radio stations that might come into being after the Act, as the NPRM suggests. And, on a practical level, these ownership limits would help to ensure that no one with any actual experience in broadcasting could actively participate in these new stations. By dint of regulation, then, these stations may be pushed toward second-class performance and quality levels.

The creation of low power radio by elimination or modification of current interference rules may also have a similar effect on the FM radio band itself by hindering the development of new, advanced services such as in-band, on-channel digital radio. As the NPRM notes, plans for the delivery of this service have been based on current interference standards, and it is unclear whether these plans can be successfully modified should those standards change. While the rest of broadcasting (indeed the entire communications industry) moves toward the advantages of digital technology, this contemplated FCC policy may make it harder for the FM radio band to keep up.

Moreover, "community participation and the proliferation of local voices," *supra* at para. 2, can be achieved through a variety of ways other than the creation of microradio. People can communicate with others by obtaining extant commercial or noncommercial licenses, the purchase of air time on broadcast properties, leased access and/or PEG cable schemes, amateur radio, e-mail, internet home pages, bulletins and flyers, and even plain old-fashioned speech. The notion that a message must be broadcast over radio spectrum before its speaker has a "voice" overlooks the realities of modern life. Indeed, as time goes on, broadcasting has faced increasing competition, becoming less and less powerful a medium. It is no secret that the television broadcast networks are attempting to find innovative ways to deal with decreasing viewership in the face of cable, DBS, and other video delivery and entertainment systems that compete for the public's attention.

And, of course, Commission enforcement of rules and regulations applicable to the new stations will be an administrative drain and involve the Commission in micromangement of the smallest of operations.

Thus, this proposal does not do much to advance its supposed goals. What minimal furtherance of those goals it would achieve comes at great cost to current licenseholders and listeners. Good -- arguably better, even -- alternatives for the dissemination of messages in America certainly exist. And the administrative burdens on the Commission will likely be great. Accordingly, I do not think this proposal represents an efficient use of radio spectrum.

In addition, I do not view concern about the effects of consolidation in the radio industry as the result of the 1996 Telecommunications Act as an appropriate motivation for the creation of low power radio stations. *See supra* at para. 10 ("[W]e are concerned that consolidation may have a significant impact on small broadcasters and new entrants into the radio broadcasting business by driving up station prices, thereby exacerbating the difficulty of entering the broadcast industry and of surviving as an independent operator."). These are, at bottom, arguments against consolidation. Congress, however, made the clear policy choice to lift national ownership limits. Whatever the results of that choice, they are the function of Congress' elected course; Congress surely realized that one of the possible results of lifting ownership limits would be that any pent-up demand for properties that would be released into the market might raise prices.

Finally, I have procedural concerns about the Commission's use of its resources in relation to this proceeding. Specifically, I wonder whether the "substantial interest in, and public support for," *supra* at para. 1, this rulemaking, relied upon so heavily in this item, was not partly generated by the Commission itself with its web site page for low power radio.[153] A brief review of this page reveals that -- whatever one might think about low-power on the merits -- the summary provided there was simply not an objective assessment of the rulemaking and the issues that it raises. For example, the summary described the possible advantages of low power radio but made no mention of the potential drawbacks. The summary also urged readers to file comments in order to "successful[ly]" implement the proposals.

The provision of information about our activities is an important and laudable goal. In meeting this goal, however, we must be careful not to slant our presentation toward one point of view, lest the Commission become an advocate instead of a neutral decisionmaker. Of all agencies, the FCC should not be attempting to shape and color public opinion on matters before us by the dissemination of unbalanced information. I believe that, if we are to enjoy the appearance of fairness in the rulemaking process, we should not use government funds to promote a particular result prior to even the issuance of an NPRM. Not only does such promotion damage our impartiality, but it puts private interest groups on the other side of the issue in the position of having to expend resources to counter not just the efforts of opposing parties but of the agency as well.

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In short, given the potential harmful effects on current licensees and their listeners, the limited benefits of creating a low power radio service, the burdensome regulations placed on the new

[153]Since the adoption of this NPRM, the Mass Media Bureau has revised the site. I have attached the version of the site that was posted up until that time, however. *See* Low Power FM Radio Service <www.fcc.gov/mmb/prd/lpfm> (as updated 12/14/98) (attached).

stations, the new enforcement duties for the Commission, and the availability of alternatives for communication, I do not believe that the pursuit of this proposal comports with our statutory duty to" make available . . a rapid, *efficient*, Nation-wide and world-wide wire and radio communication service." 47 USC section 151 (emphasis added).