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Office of the Secretary
Federal Communications Commission
Room 222
1919 M Street NW
Washington, DC 20554

Comments on RM9208

The following comments on this rulemaking are submitted by Harold Hallikainen. My involvement in the broadcast industry extends back to 1970. The comments will expand a bit beyond the specific petition, since it appears other petitions have been submitted on the issue.

These comments are available in electronic form at http://hallikainen.com/lpfm/hhcomments.thml .

Introduction

In general, I agree that there is a need for an extremely local broadcast service. Further, I believe that service can be established without compromising the existing broadcast interference standards.

Purpose of Service

Due to their low power, equipment costs for these stations are expected to be low. Due to limited coverage, the market price for these stations is also expected to be low. These low cost factors should allow entry into broadcasting by those without the vast amounts required to purchase an existing station or win a station in the auctions proposed for new full-power stations. I don't believe, however, that costs will be as low as equipment costs alone, or those costs with a small application fee. No matter how low the power is, only a certain number of stations can be authorized in a specific area without objectionable interference. This limit is probably what will drive the market price for such station, though that price would certainly be less than full-power stations.

The petition states that due to the low costs, such stations would be able to profitably devote broadcast time to niche subjects, such as golfing, flying, archery, etc. It appears, however, that the percentage of the population interested in a particular niche subject would be about the same for a station with a large coverage area as that for a station with a small coverage area. The cost of reaching each individual with that interest is probably the same, or higher, with a low power station than it would be with a full-power station. A full-power station costs much more per minute of program time, but reaches a proportionately larger number of people. Niche "interest" programming is probably best served by large coverage media with low "per channel" costs. Media that meet these requirements are CATV (cable television), internet, and print (especially small magazines or 'zines).

However, such stations *could* serve a particular niche interest much more efficiently than full-power stations. That interest is a *geographic interest*. A full-power station cannot effectively provide a discussion for neighborhood issues, since it covers many neighborhoods, most of which would have no interest in an issue of interest to a particular neighborhood. The full-power station suffers from *waste circulation* when it tries to adequately cover very local issues.

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In its various proceedings on the Main Studio Rule and the Suburban Community Policy, the Commission questioned whether the community a station is licensed to has issues that are distinct from those of the larger community covered by a full-power station. In relaxing its main studio rule (to the current allowance for the main studio to be anywhere within the principal community contour and the proposed further relaxation of the rule to allow a station to locate its main studio outside the principle community contour, possibly far from any of its listeners), the Commission has encouraged stations to run programming responsive to the entire coverage area instead of the community of license. A lower power station would similarly program to the interests of the citizens of its coverage area. However, since the coverage area is much smaller, more local issues can be dealt with.

There are many local issues that are of great importance to the citizens of that area, but of little importance to others. In San Luis Obispo County, the community of Los Osos has a controversy regarding a proposed sewer system. The full-power station licensed to Los Osos has provided minimal, if any, discussion of the issue. It, instead, provides music programming of interest to the citizens of its much larger coverage area. Also, as permitted by the main studio rule, this station does not have its main studio in the community of license, instead choosing to locate its studio in the larger city of San Luis Obispo.

I believe only one city in this county has its city council meetings broadcast on a full-power station. The city of San Luis Obispo has its meetings broadcast on a relatively low power NCE station that provides good coverage of the city and marginal coverage of other cities. The city of Morro Bay videotapes its meetings and broadcasts them later on the local CATV system. It is interesting to note, however, that the city council meetings of the city of Grover Beach are broadcast by an unlicensed FM station ("Excellent Radio"). The full-power station licensed to Grover Beach, again, chooses to serve the larger audience within its coverage area (and locate its studio outside the licensed community).

Having a full-power station broadcast programming of interest to only a limited geographic area would be inefficient use of the spectrum. Therefore, it makes sense for the local broadcast needs to be served by a low power FM service instead of by full-power FM stations, which should continue to server the common interests of the larger community.

Urgent Need for the Service

The petition makes several arguments for the urgent need for the service. Although they have some merit, the arguments do not seem strong.

The first argument appears to indicate that a low power radio service will aid in the "building of communities." I agree that low power stations can help in bringing communities together. However, as discussed above, it appears these would be geographic based communities instead of being based upon other interests (whether those interests be Trekkies, Alcoholics Anonymous, or 4-H Clubs). Again, nongeographic based interests are more likely to be better served by multichannel services that cover a wide geographic area (perhaps Usenet newsgroups).

I find the arguments in paragraph *1.3b* of this section unconvincing. While it is true that these stations would have a lower barrier to entry than full-power stations, I doubt anyone will achieve much "upward mobility" from the operation of such a station. They can, however, help the local community by providing a low cost medium for the discussion of local issues.

Paragraph *1.3b* goes on to state that low power stations would serve as a training ground in technical and entrepeneurial fields. I do not expect this to be a major effect. The petition goes on to state that microstations can provide new technical solutions for broadcasting. Examples include the use of RAM for storage of program audio. However, current costs of magnetic storage (especially hard disk) are substantially below that of solid state storage (RAM), making it unlikely that RAM storage of program audio will be any more practical than magnetic storage. Further, the paragraph suggests licensees would experiment in the design of the RF transmission portion of their stations. I don't believe that licensees of low cost, low power stations would typically have access to the test equipment required to insure that their innovations in RF design continue to meet FCC requirements for protection against interference.

Paragraph *1.3c* goes on to state that full-power stations choose not to take the risks associated with innovative new programming. This may indeed be the case, since costs are much higher on full-power stations. Low-power stations could take risks on programming, since they have little to lose.

Proposed Radio Frequency Allocations

This section of the petition deals with several issues. I will address each individually.

Dedicated Channel

The petition proposes a single FM channel and a single AM channel be allocated nationwide for a low power service. There are several problems with this proposal. With the current broadcast licenses, there *are* no channels available nationwide to support such a service. Second, the allocation of a single channel in each service would severely limit the number of stations that could be authorized. Third, I believe there is generally more interest in a low power FM service than a low power AM service.

Instead, I would propose that stations be permitted "wherever they fit." The Commission could accept applications to amend the FM table, or the Commission could run a computer program to determine which channels would fit where (based on current allocations), and amend the table of allocations in one procedure. This appears to be a more efficient approach.

Should the Commission find a way to expand the FM band (perhaps using a portion of TV channel 6 as most digital television stations move to UHF), the Commission could establish a license-free low power FM broadcast service on channels dedicated to that purpose. These stations would not be protected from interference and would be required to use FCC approved equipment (similar to the requirements on other unlicensed intentional radiators in part 15 of the Commission's rules).

Ownership Limits

The petition proposes allowing one owner to own up to five stations, each separated by at least 50 miles. Other petitions filed with the Commission have proposed a local residency requirement. I believe that a single licensee should be limited to owning one low power FM station. This will increase the number of licensees, increasing the number of media "voices." Further, with the prospect of being the licensee of one station, a potential licensee would most likely choose to be the licensee of a local station, allowing participation in the running of the station more easily. Therefore, I see no need for residency requirements on licensees, as proposed in other petitions.

Auctions

The petition discourages the use of auctions in the awarding of licenses. I would support the use of auctions. Previous attempts to use hearings to determine the most qualified licensee often resulted in the license being awarded to the applicant who could pay his lawyer the most money (and continue to participate through many years of hearings) or the applicant who bought out the other applicants. In each case, the license was awarded based on money paid.

The Commission has also tried use of a random selection process. This resulted in application mills advertising your chance at winning a license worth millions of dollars by merely paying this company to file an application on your behalf. I don't believe the public was best served by this process.

Use of auctions, however, makes the most efficient use of the spectrum. Further, the public is paid for use of a public resource (the electromagnetic spectrum). While the current auction process (as used in other services and proposed for broadcast) uses the auction only to determine the award of a license in cases where there are mutually exclusive applications, I believe it makes sense to implement a system of *spectrum leasing*. With the existing renewal expectancy on licenses, the spectrum is *almost* purchased by licensees. It would make more sense to keep this public resource in public hands and to "rent it out." Applicants would bid for a fixed term lease on a channel (that term could be 10 or 20 years). When the lease term is up, another auction would be held for the channel.

I believe the petitioner proposes use of random selection instead of auctions in an effort to keep the cost of entry into broadcasting low. However, if licensees are allowed to sell these stations (and even that is not a given), the cost of entry for all but the first licensee will be determined entirely by the market, just as it would be with an auction. Further, those with lots of money to spend could apply for many stations, improving their chances in a random selection process over those with little money to spend. These factors indicate that use of a random selection process will not lower the entry cost. It also appears fair for the public to be paid for use of a public resource. Further, the public should be paid for use of the resource *at market value*, not some artificially low value.

Cost of entry is going to be largely determined by the market value of the stations. The low power (and thus limited coverage area) will limit the market value of the station. The proposed ownership limits (a limit of one station, as I propose) will limit the market value of the station. These low values will make it easier for new people to get into the field of broadcasting.

Another possibility to consider is to prohibit the selling of licenses. If one does not wish to continue as a broadcaster, the license would be returned to the Commission, who would then find an appropriate licensee through whatever process is adopted.

Preferences for high schools and universities

The petitioner proposes a preference be given to educational instututions in the licensing of these stations. I believe such preferences unnecessarily complicate the process of awarding licenses. If the Commission (or Congress) wishes to further support broadcasting by educational institutions, it can allocate funds for these institutions to bid on channels at market value. The source of these funds could, in fact, be the proceeds from auctions.

Transmitter Characteristics

The petition suggests various vague standards for transmitters (crystal controlled, minimum of harmonics, etc.). The petition also suggests that transmitters not be type-approved, as this adds costs to the products. The petition also suggests that each station be required to have a frequency counter and a monitor receiver to insure signal quality.

Such vague standards to little to protect other services from interference. Various qualities of quartz crystals are available, some of which are suitable for use in the reference oscillator in an FM transmitter, some of which are not. A "minimum of harmonics" is a very vague standard that would be difficult to enforce.

I would suggest that transmitters be required to meet the standards for FM translator stations, since these stations are in the FM broadcast service and operate with similar power levels. Further, some sort of FCC approval of equipment appears necessary to adequately guard against interference. This may take the form of certification by the manufacturer to the Commission that the equipment meets the standards specified in the Rules. As with the rules for full-power stations, I believe the rules should specify the characteristics of the transmitted signal and require licensees to meet those requirements. Whether a station owns or rents a frequency counter or spectrum analyzer is of little import as long as the radiated signal meets specifications.

Proposed License Term and Fee

The petition proposes a license fee of $50 and a license term of 5 years. As discussed above, I believe an auction is the appropriate means of determining the license fee. With an auction, I would encourage longer license terms, similar to the life of the equipment (10 to 20 years). The longer term allows a licensee to build the investment in the station. At the end of the term, I would suggest the license be auctioned for the next term.

Should the Commission choose to not go with "spectrum leasing," I would propose that the fees and term be the same as that for FM translators, since the services are very similar.

Proposed Penalties

In determining penalties for violation of the Commission's rules, the Commission already considers the seriousness of the violation (especially its interference with other stations and danger to life potential). Low power stations would have less capability of endangering life or causing serious interference (though they certainly can!), and would thus be subject to lower forfeiture amounts. Further, the Commission considers the ability of a licensee to pay a forfeiture. Therefore, I don't believe any change in this area of Commission's Rules or Policies are required in considering a low power FM broadcast service.

Minimum Operating Schedule

Minimum operating schedule requirements appear to be only necessary when a licensee has paid less than the market value for a station. When a licensee has paid market value, he/she would be unlikely to let the channel sit vacant. Further, ownership limits (one station per licensee) would eliminate "hoarding" or warehousing of channels, which could result in many vacant channels that are unavailable for assignment. If a licensee is unable to keep up lease payments on a channel, the channel could be taken back by the Commission and the lease auctioned off again. Further, a licensee could sell the remaining term of the lease, recovering costs and putting the channel back into use.

This seems far simpler than detailed rules on how many times a licensee can lose a license and apply for a new one.

Other Considerations

In this section, I'll review issues not addressed above or in the Leggett petition, but raised in a petition filed by J. Rodger Skinner for a similar radio service.

First Amendment Concerns

There may indeed by free speech concerns raised when the Commission *unnecessarily* limits the number of broadcast stations. The Commission must limit interference and make efficient use of the spectrum. The existing FM interference standards are probably a good approach to these concerns. As the Commission stated in Docket 20735 (1978), (as quoted in 53 FR 22035) "The Commison also observed that full-service stations make more efficient use of the spectrum than translators in that the ratio of coverage to interference area is much larger for full-service stations than for low-power translators." However, there exist gaps between the coverage and interference contours of full-power stations where low power stations could fit without exceeding the existing interference limits. Not permitting use of these low power stations in these gaps raises questions as to whether the Commission is limiting speech (through broadcast) in the least restrictive means necessary.

Granting these low power stations may "lock in" full-service stations, not permitting them to change facilities. Rather than grant low power stations a secondary status (similar to FM translators), I believe it would be more fair for such stations to have the same status as full-power stations, but any remaining license term could be "bought out" by another station wishing to make a facility change that would be prohibited by interference to the low-power station.

Concentration of Media Ownership

As pointed out in the Skinner petition, the Telecommunications Act of 1996 has allowed a massive increase in the concentration of media ownership. Through cost consolidation, the public may benefit through higher quality programming at lower costs (lower advertising rates, assuming the concentration has not gotten to the monopoly price control point). However, the public would also benefit through an increased diversity of media voices. A low power FM service with strict ownership limits would meet this objective. In 5 FCC Rcd No. 7, page 2106, paragraph 39, the Federal Trade Commission commented that permitting local program origination on FM translators (which would be a low power FM service similar to the existing LPTV service) would be of potential benefit to consumers by providing an increase in the number of listening options.

Local Ownership Requirements

The Skinner petition proposes a local ownership requirement (all owners must live within 50 miles of the proposed transmitter site). As discussed above, if a single licensee (considering attributable interests in other licensees) can own a maximum of one low power station, it seems unlikely that one would choose to own one far away. As with the previous "integration" policy of the Commission in granting full-power stations, a local ownership requirement would result in innovative ways to get around the rule and hve no effect once a license is granted. A low numerical ownership limit would probably meet the objective of this proposal.

Pirate Radio

The Skinner petition claims that starting a low power FM service would largely solve the "pirate radio problem." While, as Skinner claims, many pirates would become licensed stations, others would be tempted to continue to operate without a license. However, the existence of a low-power FM service would possibly remove the constitutional questions being raised in the existing FCC v. Dunnifer case. Once the Commission has reasonable rules regarding the operation of low power stations, it can enforce those rules. As it stands, there are various obstacles to enforcement of the existing rules.

High Power LPFM

The Skinner petition proposes various classes of low-power FM stations, including one with a permitted ERP of up to 3 KW at an unspecified HAAT. This seems like a slight extension (3 dB) from the existing full-power FM service. As we continue to add classes of stations, we may, at some point, just decide that stations can run whatever power fits based on interference contours, doing away with the concept of station class entirely. This seems a bit beyond the scope of this proceeding. I would therefore favor the power limits currently in place for FM translators being applied to a low-power FM service. These would be truly local stations with low ownership costs (and market value).

Special Event Stations

Other countries have a mechanism for licensing short term stations for special events. In this country, many events (especially large music events) have set up unlicensed stations to communicate with their attendees. It does appear that there is a need for such stations, but the number of applications may exceed the number the Commission is able to handle. Further, the Commission would have to work out details for awarding licenses when there are mutually exclusive applications (perhaps auctioning off the channel on a week-by-week basis). I believe such stations are best handled through a license-free service. Such stations would operate with FCC approved equipment on one of several channels dedicated to license-free broadcasting. These stations would not receive any interference protection. As discussed above, the allocation of channels for this service seems difficult. It makes most sense in the long term to look at expansion of the FM broadcast band slightly in the upward (removing some spectrum from the aviation service) or downward (removing some spectrum from TV channel 6) direction.

Interference Predictions

The Skinner petition makes a detailed listing of interference considerations. It would appear that existing interference criteria for FM translator stations could be applied. The petition also suggests removing interference considerations on second adjacent, third adjacent, and IF separated channels due to improvements in receiver performance since the existing standards were adopted. I believe any updating of interference standards should be done on the entire FM broadcast service (full-power, low-power, FM translator) instead of on a piece-by-piece basis.

Allocation Table vs Filing Windows

The Skinner petition proposes the use of application filing windows instead of an allocation table with cutoff lists. Both these approaches attempt to find the most qualified applicant while minimizing use of Commission resources by "nonserious" applicants who treat the application process as a chance to get rich in a lottery. Neither approach adequately compensates the public for the use of a public resource. The auctioning of spectrum leases would award the license to the applicant proposing the most efficient use of the spectrum and would compensate the public for the market value of the spectrum. Again, high costs can be minimized by minimizing the market value for the license. This can be achieved by limiting the coverage area (through power and HAAT limits) and ownership limits (one station per licensee). Further, having the Commission allocate channels on the basis of where they will fit (similar to the current allocation proceeding for digital television) would save a lot of engineering expense. The work would be done once, by the Commission, instead of by every applicant trying to find a channel.

Filing windows and other approaches to limiting the number of applicants are an attempt at awarding a license at a low cost. This is supposed to establish a radio service "for the rest of us." However, it only limits cost to the initial licensee. Any later licensee would likely have to purchase the license from the existing licensee *at market value*. It makes little sense for an initial licensee to get a special deal from the American public while later licensees must pay the original licensee for use of a public resource.

What I think we should do

There indeed appears to be a need for a low-power FM radio service. The quick and simple method to establish such a service would be with a very minor modification in the existing rules for FM translators. The rules would be modified to allow the origination of programming (instead of the current requirement that translators only rebroadcat full-power stations). This was the approach that was taken with the establishment of the low-power television service. I believe low-power FM can be more successful than low-power television, since costs associated with the production and transmission of audio are so much lower than those associated with video.

To address some of the concerns raised in these petitions, the following additional changes should be made in the rules regarding FM translators (and low-power FM stations).

1. **Ownership.** One LPFM or translator licensee shall have an attributable interest in no more than one broadcast station (full-power, FM translator or low-power FM station). Existing translator applicants would be grand-parented and allowed to keep their existing stations. On changing ownership, the number of low power stations (LPFM or translator) would have to be reduced to some fraction of that currently owned. Eventually, all low power stations would be owned by one-station licensees.

2. **Auctions.** To the extent permitted by Congress, all broadcast station licenses will be awarded by auction. As proposed previously, I believe it makes the most sense to auction fixed term leases on channels. Upon expiration of the lease, the lease for the channel would be auctioned again.

Thank you for your consideration of these comments.

Sincerely,

Harold Hallikainen