

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

<i>In the Matter of</i>	)	
	)	
Amendment of Parts 73 and 74 to further	)	
implement the Local Community Radio Act	)	RM-11810
of 2010 and make other improvements to the	)	
Low Power FM Service	)	
	)	

**COMMENTS OF COMMON FREQUENCY AND PROMETHEUS RADIO PROJECT**

Common Frequency and Prometheus Radio Project (“Commenters”), both nonprofit organizations dedicated to noncommercial and Low Power FM (LPFM) service advocacy, submit this comment regarding rulemaking RM-11810 (“Rulemaking”) proposed by REC Networks (“REC”).

Commenters are aligned with the sentiment of REC’s proposal and support many of the proposed rule changes. Based on our direct relationships with a large number of LPFM licensees, we chiefly support the following proposed modifications: LPFM minor change moves, assignment of "failing" construction permits, duration of construction, explicit permittance of boosters, modification of channel 6 protections, use of directional antennas, and Mexico border proximity proposals. In many cases, the changes proposed simply streamline current LPFM rules by borrowing time-tested measures from full power and translator services to create more versatile means of compliance.

REC also proposes flexible engineering for incumbent facilities to create greater opportunity for service, especially in urban communities, with the much-needed option for 250 watt upgrade for LPFM. Both are outlined at a granular level with cogent reasoning. We align with the spirit of this proposal, however, we suggest possible alternative tweaks to achieve these goals. For the sake of ease and understanding, Commenters suggest that the Commission should aim to harmonize translator and LPFM methodology where possible. Much of the discord within the secondary services, leading to legal contest, stem from a lack of alignment between the LPFM-translator engineering methodologies. This is burdensome and time-consuming for the Commission, and immensely challenging for fledgling LPFM licensees that are forced to spend considerable sums of money hiring lawyers to interpret these rules. At its origination, the Commission elected distance-spacing for LPFM to make the service easier for members of the public to propose without incurring the expense of engineering support. The crowded band, which now necessitates second adjacent waivers, makes it challenging for the average LPFM applicant to work through form 318 without using a professional engineer. It is in the best interest of both the Commission and FM stakeholders to attempt to simplify and mesh the LPFM and translator methodologies, where possible, to eliminate the inconsistencies which lead to unnecessary points of contention.

The first paragraph of the Rulemaking summary states "... two of the main causes of this preclusion [of a more successful deployment of Low Power FM] is as a result of unnecessary overprotection ... as well as a disparity in the relationship between LPFM stations and FM translators, two services that are generally 'equal in status'." The word "generally" should be "supposedly"—as these inequalities create big problems.

Commenters agree in principle with the proposal relating to Section 73.815. This idea has been discussed openly, and is stems from the Section 73.215 regime for full power stations.

The Rulemaking's LP-250 plan as proposed raises some concerns, addressed later in this document. Rather than inventing a new plan, we suggest it would be "cleaner" to consider how to permit LPFM services to utilize translator rules, exactly.<sup>1</sup> This remedies most of the deployment and methodology discontinuity issues, and would unequivocally establish LPFM-translator parity. Conversely, it would allow translators to utilize LPFM rules, furthering equality of service. This levels the playing field and eliminates much of the LPFM-translator rivalry. A streamlined way to do this would be to create a mature "LPFM+" service class such as "Class D-250" to for which incumbent LPFM facilities could migrate. The new service would simply retool the Class D NCE rules to translators--wattages and contours. Since the Class of service would be migrated from LPFM to Class D-250, it would jettison the convoluted minimum spacing constraints.

The following comments are concerning specific paragraphs within the Rulemaking:

### **III. PROPOSED CHANGES TO LPFM SERVICES**

#### **A. §73.807 minimum distance separations**

#### **CONCERNING: 1. PROTECTIONS TO FULL-SERVICE FM STATIONS:**

**Regarding paragraph 20: "Create a second "regime" for protection to incumbent facilities – REC is proposing to create two different regimes under which LPFM stations**

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<sup>1</sup> 74.1203, 74.1204, 74.1205, 74.1235 instead of 73.807, 73.809, 73.810, 73.811

**can be authorized.”** Conceptually, we agree. The proposal creates more flexibility, which we endorse. However, Commenters wonder if there is a clearer path with a more robust outcome. We would have concerns if the new rules provided limited and non-commensurate benefit. If possible, the simple alternative of adopting streamlined translator rules offers a more streamlined solution.

**Regarding paragraph 26: “LPFM will still be subject to inward interference.”**

Translators are permitted to increase power to 250 watts, at times with no height limitation (concerning fill-in translators) to negate incoming interference. LPFM service is limited to a nominal 100 watts at much lower HAAT. Some LPFM facilities are forced down to one watt, succumbing to untenable incoming interference. Translators are permitted greater elevation based upon a different methodology. There is no HAAT ceiling for “fill-in” translators. Concerning these aspects, translator rules —again —offer novel relief for LPFM.

**CONCERNING 2. PROTECTIONS TO FM TRANSLATORS, BOOSTERS AND OTHER LPFM STATIONS:**

**Regarding paragraph 28: “Current rules: LPFM protecting translators and other LPFM stations.** It’s important to note that “LPFM-to-LPFM” rules are reciprocal and protect in both directions. Ordinarily there’s no contour overlap either direction. This is as it should be.

**Regarding paragraph 29: “Current rules: FM translators protecting LPFM stations.”** It’s important to note that this relationship is non-reciprocal. As stated, “translators are allowed to use variable power levels and directional antennas to demonstrate protection” in which cases, an LPFM could be “grandfathered” to avoid being forced to relocate, and would

most likely find it impossible to move. With contours, translators are given the option to choose to accept any amount of "interference" from a LPFM. Given the converse is not true, this discrepancy disadvantages LPFM stations as interference is essentially not bilateral. Moreover, this significantly erodes "fringe" coverage of the LPFM station, which is often nominal (barely outside 60 dBu). Furthermore, translators are not required to protect LPFM on second-adjacent channels, while LPFM stations must protect translators—which can require an expensive multi-bay antenna, which then creates a significant impediment for some rural stations to build. This is, it seems, is an unintentional point of inequality favoring translators.

Currently pending is a Notice of Proposed Rulemaking intending to eliminate or relax the rule allowing any translator to be shut down by documented interference. While LPFM services are not subject to this burden, it is critical to note this has proven to be a critical recourse for LPFM stations facing newly proposed egregious translator interference to fringe listenership—or in situations where the translator has an inequitable ability to afford litigation and support from long-formed advocacy organizations.

**Regarding paragraph 30: “Burdens facing LPFM stations since AM Revitalization”**

Commenters embrace this statement.

**Regarding paragraph 32: "REC proposed rule change"** Here, the REC proposal is reasoned in its approach. We agree this represents a step in the right direction. However, given the benefit of refinement, we suggest there is a more streamlined approach available. We strongly advocate for the consideration of engineering parity between Translator and LPFM stations. We acknowledge REC’s proposal is constrained by minimum spacing rules mandated

through Local Community Radio Act, and that novel encoding would be required to achieve more flexible engineering relief. Here, we underline the undesirable impact of unnecessarily complex rules. We suggest the solution may be as simple as migrating incumbent LPFM service to a new *mature low power secondary service* — not LP-10 or LP-100, but a class which falls under a Class-D identifier, for which LCRA minimum spacing rules need not apply.

**Concerning: 3. LPFM stations within 125 kilometers of Mexico**

**Regarding 3. "The Audio Division routinely grants FM translators to operate at ERPs in excess of 50 watts using directional antennas which keep the ERP to 50 watts or less along the radials that are within 125 kilometers with Mexico."** Again, we point to streamlining Translator-to-LPFM t rules to resolve.

**B. §73.816: Directional antennas**

**CONCERNING: 1. USE OF COMPOSITE ANTENNA PATTERNS**

Translators often specify very directional antennas, with deep nulls to protect other stations. However, deep nulls truly exist only in the lab. When an antenna is mounted on an actual structure, the nulls move. The data sheet for a broadband antenna is actually measured at particular frequencies. For all others, the nulls migrate. Accepting the rare case that nulls are accurate in a real world situation, there may be metal fixtures within the antenna's proximity that reflect and re-radiate the signal, marring the directional pattern. Designers of AM facilities are well acquainted with this phenomenon. They often need to re-proof upon construction completion within a few miles of their directional antennas.

Full power stations are only allowed to depend on a 15 db null, and also are only permitted to depend on a slope of 2 db per 10 degrees. They are required to have a proof done with the actual antenna or detailed scale model, mounted on a complete model of the supporting structure, complete with all the intervening metal pieces, at a typical cost upwards of \$10,000. That applies even to minimum Class A facilities that may be less wattage than a translator. Full power stations additionally need to protect both ways. A licensed surveyor needs to certify that the custom antenna is azimuth-aligned.

Translators need not endeavor any of this, but conversely are subject to the policy that an interference complaint can shut the facility down.

Commenters agree that LPFM facilities should be allowed to use directional antennas like translators. Also, the use of directional antennas by translators needs to be examined, and possibly comport to more stringent safeguards, especially in light of relaxation of translator interference remediation.

#### **Concerning: 2. *Use of directional antennas in LPFM***

Commenters agree, but believe that, like translators and like NCE reserved band full power stations, many LPFM facilities will ultimately need directional antennas to survive.

In *Appendix A*, Rec proposes some rules:

"(4) An application that specifies the use of a directional antenna must: (1) Certify that the antenna is mounted in accordance with the specific instructions provide by the antenna manufacturer; and (2) certify that the antenna is mounted in the proper orientation. In instances where a directional antenna is proposed for providing protection to another facility, a condition may be included in the construction permit requiring that

before program tests are authorized, a permittee: (1) Must submit the results of a complete proof-of-performance to establish the horizontal plane radiation patterns for both the horizontally and vertically polarized radiation components; and, (2) must certify that the relative field strength of neither the measured horizontally nor vertically polarized radiation component shall exceed at any azimuth the value on the composite radiation pattern authorized by the construction permit."

Commenters agree in principle that something similar to this is needed (for translators too) but have concerns this is too expensive for LPFM permittees/licensees. A complete proof can cost upwards of \$10,000, significantly increasing the total construction cost. As a compromise, off-the-shelf antennas should be acceptable without a custom proof, or alternatively, like the present translator rules, the station would be required to solve any actual interference. The rule for LPFM should be identical to that of translator service.

#### **C. §73.825: Protection to reception of TV channel 6**

Commenters agree that the LPFM rule as it stands is overly burdensome.

Full power stations can comply with the rules by using vertical-only polarization, which results in a slight loss of coverage. Most full power stations in the reserved band have been licensed for a significant amount of time (such as LPTV), grandfathered to not protect channel 6 at all. There does not seem to be significant problems regarding this, leading to the question of why the old protection rules remain on the books as conservatively stated.

The old rules were designed based on outdated analog technology which utilized an envelope detector to extract the AM video, and then picked off a 4.5 MHz subcarrier from the video to pass to an FM detector for the audio. Even with analog, better filters and synchronous



detection make the old rules severely overprotective of channel 6. With digital, such protection is completely unnecessary.

Rec makes a middle ground proposal, but there might be further questions related to further analysis or science to hone an exact solution. We suggest that LPFM stations additionally be permitted to show TV interference protection via contours, using the translator rule §74.1205(c).

#### **D. §73.860: FM translators owned by LPFM stations**

The existing rules allow for a LPFM to own two translators, but the practical side is that without an application window it is moot because none are foreseeably available. This further underscores the idea that LPFM should simply be able to use translator rules for its main station.

#### **Concerning: *2. FM boosters for LPFM***

#### **Regarding paragraph 53:**

While REC was able to successfully get rule waivers for two stations, we do agree that in most, but not all cases would an FM booster would not be beneficial to an LPFM station."

In Strategic, we had a situation where an LPFM station was situated in a foothill area with terrain so unique that there were areas between 2 and 10 miles to the east that were also of lower elevation terrain. This created a very unusually- shaped protected service contour. The booster helped fill in that area, that was otherwise being reserved for them through contour protection but was blocked due to terrain.

This example illustrates that the FCC method of determining terrain is not meaningful for the low power, low height, short distances of LPFM. It is an example of abuse of the booster concept.

The contours are based on points from 3 to 16 km, which is mostly beyond the nominal coverage of an LPFM. This often results in contours that have little or no correlation with real coverage. In this case, a mountain ridge blocks a low valley, on which coverage is based. The contour shows predicted coverage far beyond the usual LPFM coverage in a valley, when in reality there is no coverage at all. This area is all beyond the usual 5.6 km coverage circle of an LPFM. The booster adds coverage far beyond normal LPFM coverage, in effect extending the protected area, causing interference to other LPFMs significantly beyond the nominal coverage.

The other case mentioned, "Laguna", REC claims is "rare", but this is the legitimate case for a booster.

The LPFM service would be better served by allowing the use of contours, using the well established translator rules. If this were allowed instead, the "Strategic" booster would have no benefit because the main station could have been located at the booster site, with much better results. Under the existing rules, a main station at this site would be allowed only two watts, but a booster there was approved for six watts.

Similar situations exist in many places. A high site for the main station that would be considered ideal in any other service is a poor site for LPFM because of the extreme low power, based on terrain far away, so nearby coverage is very poor.

**Regarding paragraph 54: *"Because of this flexibility, this makes the current FM booster rules non-applicable for boosters operated for LPFM stations. In most cases, it would not be viable ....."* and**

**Regarding paragraph 55: REC proposes guidelines for LPFM boosters.** We support the Commission embracing boosters for LPFM. The proposed guidelines may be appropriate to assist a handful of stations with terrain issues. But it is important to note, the most efficient and effective engineering solution would be merely to allow LPFM service to pick the most appropriate site utilizing translator contour rules for the main station. A booster is seen as a work-around for spacing rules that do not work to provide the LPFM with the most appropriate site.

***"In markets 1~50, the proposed FM booster location is within 10 miles of the LPFM station."*** There is technical question to this part of the proposal. It is unclear why a booster has a 10 mile radius limitation when the nominal coverage is 3.5 miles.

## **Conclusion**

In total, Commenters are supportive of the Rulemaking. We mainly would like to interject the entertainment of an augmented low power service using streamlined contour rules. This would immensely simplify all aspects of a matured form of low power FM deployment.

Submitted By,

/s/

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