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

In the Matter of:	)	
	)	
Amendment of Part 74 of the Commission's	)	MB Docket 18-119
Rules Regarding Translator Interference	)	
	)	
	)	

To: The Commission

REPLY COMMENTS
OF
PUEBLO BROADCASTING GROUP

I. Executive Summary

On a fundamental level, the rule changes suggested in the NPRM are not fair and balanced. Rather, the changes serve to benefit translator operators at the expense of full-service stations. The suggested rule changes would undermine the core legal rights and underlying principles that have always guided the Commission's translator interference rules. Full-service licensees have relied upon the existing interference remediation scheme for many years, and their substantial investments are being jeopardized by the proposals advanced in the present NPRM. Moreover, full-service

stations already have to bear the full burden of proof in translator interference proceedings, and are exposed to significant legal fees, notwithstanding the fact that many translators are newly-proposed services. Essentially, the suggested rule changes would make it even easier for translator operators to get away with causing interference to full-service and LPFM stations.

II. Enabling Channel Changes for Translators as a Minor Modification

Any proposal to permit a translator to change frequency to a non-adjacent channel as a minor modification must be properly crafted so as to minimize the potential for gamesmanship. Otherwise the end result will be pretext filings made only to obtain a more desirable channel, or to strategically block listeners from receiving an acceptable signal from a competitor. The Commission must ensure that the need for a channel jump is real – and to prevent such remedies when simpler solutions can work without upending spectrum allotments. Jeff Siebert is correct when he states that the "Commission should simply codify long-standing [waiver] policy allowing only translators to move to another frequency if the translator is facing displacement."[1] Similarly, the Commission must require a showing that no currently allowed minor channel change would provide a remedy to displacement. Only upon such a showing would a translator be given the authority to make a bigger channel jump.

Should the Commission allow for easier channel-jumping with only a minimal, perfunctory, or pro-forma showing, the end result will be fewer future opportunities for new LPFM stations, as well as fewer opportunities for existing LPFM stations to relocate their transmitter sites if needed. By and large, LPFM stations do not have deep pockets. A typical Crown Castle or American Tower long-term lease would be beyond the financial capabilities of many operators. Rather, many LPFMs operate from rooftop sites where building ownership may change from time to time, and a new building owner may not be receptive to allowing an LPFM station to remain in place. Any proposal to allow commercial-band translators to move to any desired frequency in the range of

[1] Comments of Jeff Siebert at 3.

92.1 to 107.9 MHz should be carefully balanced against the need for LPFMs to have some flexibility in implementing future antenna site moves.

III. Time Limits on Filing Translator Interference Complaints

A non-consensus suggestion that should not be implemented is a time limit on interference complaints, such as a proposed one-year limit from the start of the FM translator's operations as suggested by certain commenters. See, e.g., Comments of Aztec at 12. The record here is replete with evidence of incorrect FM translator operations (intentional or not), for example, by improperly installing a directional antenna, using an omnidirectional design when the station authorization requires a directional pattern, using stacked arrays when a single bay is specified, and/or using a grossly over-powered FM transmitter.

Unscrupulous or inexperienced FM translator operators could simply underpower for the first year of operations to limit interference and then, once interference complaints were barred by such a time limit, crank the power up to the licensed (or above-licensed) level. Likewise, a directional antenna could be conservatively mounted for the first-year, but then aggressively adjusted once the time limit on interference complaints had passed. The FM listening public deserves protection from interference no matter the date.

IV. Outer Contour Limits for Actionable Complaints

Pueblo Broadcasting Group objects to the Commission's proposal to establish an outer contour limit of 54 dBu (using the FCC's standard prediction methodology) for full service stations affected by translator interference beyond which listener complaints would not be considered actionable. Implementation of the Notice's "54 dBu" proposal would lead to significant audience erosion and revenue reduction for Pueblo Broadcasting Group's KIQN and numerous other full-service stations, upsetting the "equitable balance" the Commission seeks to strike between translators and other broadcast stations. The proposal must be modified or scrapped if it is to be workable.

Assuming that the Commission ultimately insists on adopting an outer signal contour limit, broadcasters must be given flexibility in how they may demonstrate that a

translator is causing impermissible listener interference “inside” such a limit. The FCC’s F(50,50) methodology fails to properly account for the real-world impact of how terrain influences coverage, and it dramatically underestimates KIQN’s actual coverage, as well as that of countless other stations. Broadcasters must be allowed to make alternative showings, e.g., using Longley-Rice methodology, when appropriate in order to more accurately reflect true coverage.

And, regardless of the methodologies broadcasters are permitted to use, the Commission’s proposed limit of a station’s 54 dBu contour is grossly inadequate. Many stations, including KIQN, have substantial audiences well beyond their F(50,50) 54-dBu contours. As such, drawing the “outer limit” line at 54 dBu would essentially authorize massive interference to thousands of listeners. Such an outcome would contravene the Commission’s rules and precedent, as well as the Notice’s stated goals.

If an outer signal limit “safe harbor” must be established, it needs to be done in a manner that adequately protects full service stations by finding a fair, appropriate limit and by allowing broadcasters flexibility in making showings of their coverage. Upon further reflection, Pueblo Broadcasting Group concurs with Blue Ridge Broadcasting and proposes that the Commission modify its rules such that no complaint of actual translator interference will be considered actionable if the alleged interference occurs outside the desired station’s 48 dBu contour, ***as calculated using the Longley-Rice propagation methodology***. However, this 48-dBu value would be unworkable and inappropriate if it were to apply only to signal strengths calculated using the F(50,50) method.

Assuming an outer signal contour limit is ultimately adopted, the Commission must allow broadcasters flexibility in how they may show that a translator is causing impermissible listener interference “inside” such limit. In other circumstances, the Commission permits alternative coverage showings to its F(50,50) propagation

method.[2] It must likewise do so here to afford full-service stations adequate protection against interference caused by secondary services, as the F(50,50) methodology does not always accurately capture a station's signal strength. The Commission's F(50,50) coverage methodology was developed in a different era, literally (the 1940s) and technologically (long before the advent of computerized studies). Requiring its use as the sole methodology here, in order to simplify translator interference disputes, is fraught with problems. The F(50,50) methodology assumes that listeners reside within an area described by contours, and it is based on Height Above Average Terrain ("HAAT"), calculated at only 3 to 16.1 kilometers (or 2 to 10 miles) from a transmitter site.

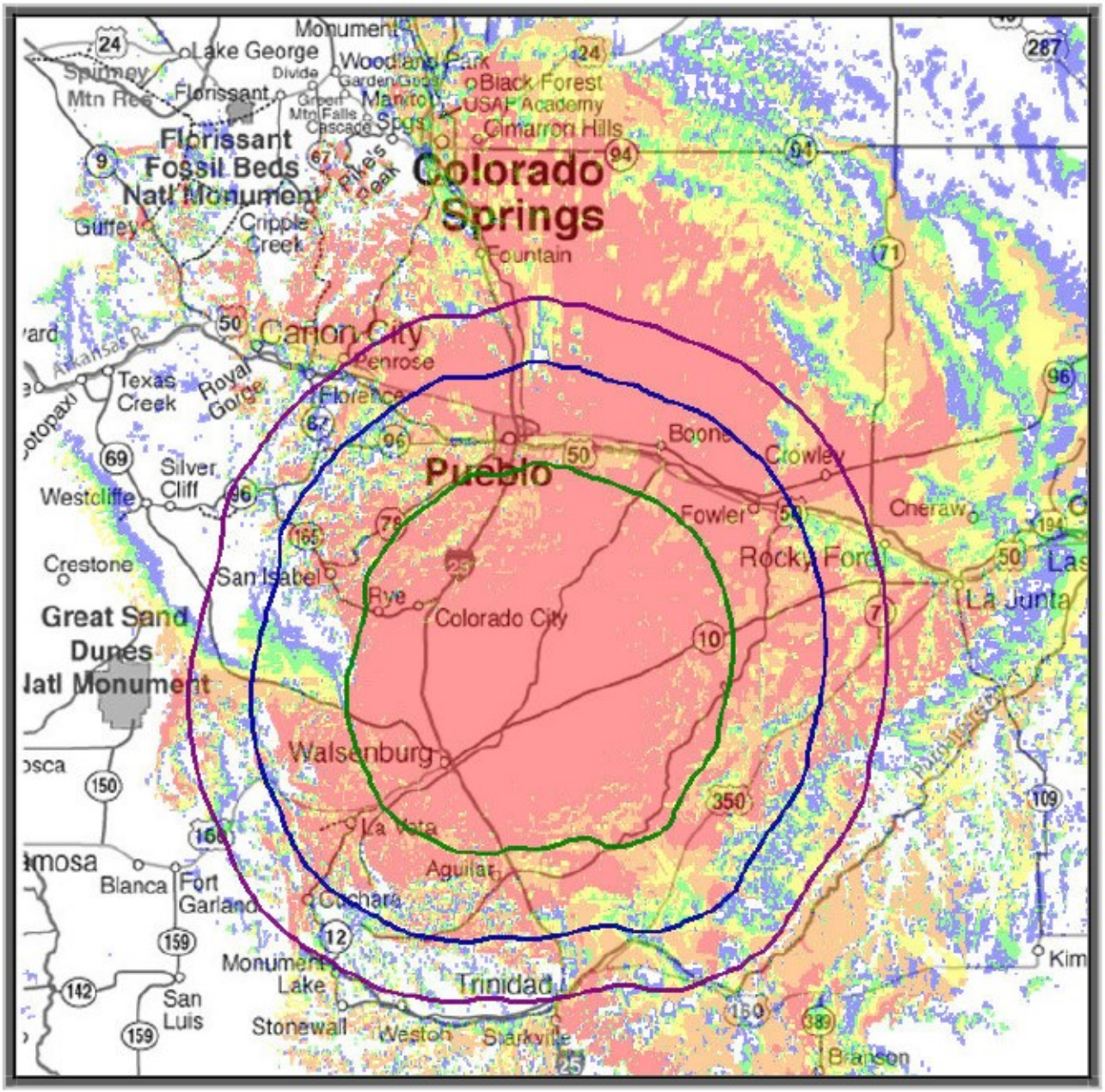
Admittedly, in some circumstances, the F(50,50) contour methodology offers a reasonable approximation of coverage. But that is hardly always the case. In fact, at the outer portions of an FM facility's coverage area, the F(50,50) methodology's assumptions, which fail to adequately account for non-uniform terrain, produce wildly inaccurate results. Class C stations, for example, have coverage contour averages of 91.8 kilometers, meaning the F(50,50) methodology, generally uses only a small fraction of a Class C stations' terrain to predict coverage distances.

For KIQN, which is situated in an area of irregular terrain, the Longley-Rice model provides a much more accurate coverage picture. Figure 1 (constituting the map shown on the following page) demonstrates the difference between KIQN's coverage as predicted by the Commission's F(50,50) methodology versus Longley-Rice. FIG. 1 shows that there are substantial areas well beyond the 54 dBu F(50,50) contour where KIQN has greater than a 60 dBu signal, as calculated using Longley-Rice.

[2] See, e.g., 47 C.F.R. § 73.313(f)-(j). Acknowledging that the standard F(50,50) methodology does not predict coverage well in all circumstances, the Commission has twice proposed "FM Point to Point" methods for deriving contours from a greater portion of the terrain, but such methods have not been implemented.

KJQY 103.3 FM

Colorado City, CO
Class C1 100KW ERP
Latitude: 37° 46' 52" N
Longitude: 104° 32' 3" W



F50:50	Color	Total Population
70 dBu		10,700
60 dBu		152,840
54 dBu		175,546

Longley Rice	Color	Population
> 70 dBu		226,879
60 – 70 dBu		209,541
54 – 60 dBu		127,393
50 – 54 dBu		77,583
45 – 50 dBu		20,871

Total Population Served With > 60dBu
436,420

Prepared By

ISHMAEL BROADCAST ENGINEERING SERVICES

In addition to coverage maps, Pueblo Broadcasting Group's own data prove that KIQN has substantial listenership in the broader coverage area demonstrated using Longley-Rice. KIQN has offered call-in programs for listeners, where on average, 54% of the callers originate from areas outside of KIQN's F(50,50) 54-dBu contour. Likewise, KIQN has received numerous email messages from station listeners, over half of whom reside and listen from areas outside of KIQN's F(50,50) 54-dBu contour. These factors illustrate why the Notice's proposed 54 dBu limit will not work, regardless of the methodology employed. The foregoing observations are consistent with what Pueblo Broadcasting Group has seen over the years: KIQN, historically, has had significant listenership in numerous areas and cities beyond the 54 dBu F(50,50) contour. Again, the available data illustrate that, in KIQN's case, Longley-Rice provides a far more accurate representation of signal strength than does F(50,50). Table 1 below shows KIQN's signal strength to several city intersections beyond the F(50,50) 54 dBu contour.

Using the geographic coordinates for these intersections and the distance and bearing to those coordinates, Table 1 shows KIQN's signal strength calculated (1) using Longley-Rice, (2) using the Δh terrain roughness factor of Section 73.313 along with HAAT as calculated from 10 kilometers to 50 kilometers (the Δh distance), and (3) using the standard HAAT from 3 to 16 kilometers along with the signal strength using standard HAAT and FCC curves. As shown below, KIQN's signal strength calculated using Longley-Rice is far greater for all the cities than as calculated by the standard FCC contour methodology—by between 26.3 and 36.8 dBu for the selected locations.

TABLE 1

Intersection Coordinates (Lat, Long)	Distance & Bearing	Longley-Rice Signal Strength	∆h & HAAT (10-50km)	Signal Level – F(50,50)
Black Forest Rd. & McFerran Rd. Black Forest, CO 38-59-26 N 104-42-01 W	135.0 km 354°	71.4 dBu	382.4 m 215.7 m	34.6 dBu
Powers & Woodman, Colorado Springs, CO 38-56-27 N 104-43-30 W	129.8 km 353°	68.3 dBu	363.5 m 213.3 m	35.8 dBu
Academy & Constitution, Colorado Springs, CO 38-51-35 N 104-45-26 W	121.3 km 351°	64.5 dBu	348.8 m 212.1 m	38.2 dBu
Colorado Springs Airport 38-47-38 N 104-42-02 W	113.4 km 353°	72.3 dBu	329.3 m 213.3 m	40.7 dBu

Thus, should the Commission set a signal limit beyond which translator interference complaints will not be actionable, broadcasters seeking to demonstrate translator interference must be allowed to use the Longley-Rice methodology to show signal strength. Clearly, reliance solely upon the Commission's methodology would, in the case of KIQN and other stations, wrongly exclude hundreds of thousands of listeners that the Longley-Rice model properly takes into account. The Commission cannot at the same time protect the integrity of the FM band while ignoring translator interference

to actual listeners who receive full service station signals well beyond the areas predicted by the FCC's propagation methodology.

While contours may be effective for most cases of spacing and allocation, they are very ineffective for reasonably approximating actual field strength at a listener's location. Other methods, such as Longley-Rice and Point-to-Point, have been proven to be more effective in accurately determining the coverage of FM broadcast facilities. The F(50,50) approach has two major shortcomings: first, it was intended to be applied to smooth terrain; and second, it only considers terrain from 2 to 10 miles from the transmitter site. The F(50,50) contour-based approach is woefully inadequate to properly model propagation in mountainous locations such as Colorado, Connecticut, and California. Thus, full-service stations in these and similar locations would be unfairly penalized and substantially harmed by a drop-dead F(50,50) interference remediation threshold.

In contrast to the F(50,50) contour-based approach, Longley-Rice and Point-to-Point consider ALL of the intervening terrain between the transmitter and the listener. Thus, the Longley-Rice propagation method is a much more appropriate method than F(50,50) in the context of translator interference that involves specific listener locations. Undesired-to-Desired (U-to-D) ratio methodology using terrain-based prediction tools such as Longley-Rice should be employed to determine field strengths for both the desired and the undesired signal at the listener's approximate location. In order for a translator interference complaint to be congnizable, the desired signal level should be used to decide whether or not the full-service station can make a valid claim to serve the area in question. This decision would use a threshold value, but the threshold would be based on Longley-Rice, not on the troublingly inaccurate F(50,50) curves.

The implementation of a draconian F(50,50)-based 54-dBu or 48-dBu translator interference remediation threshold would expose thousands of full-service FM stations to substantial audience erosion. Likewise, stations in areas of irregular terrain would be heavily penalized. Such a threshold would pose a significant threat to the continued

existence of stand-alone full-service FM stations, creating undue and unnecessary hardship on these license holders. The value of full-service FM stations would plunge.

As a practical matter, when a 54-dBu F(50,50) remediation threshold is applied to a representative sampling of 31 actual translator conflicts as described in our originally filed Comment, the end result is the translator automatically winning the conflict 94% of the time. This is because every one of the gathered complaints in these conflicts falls below the required 54-dBu threshold. Accordingly, 94% of all translator conflicts would be automatically excluded right out of the gate, with only 6% of the conflicts submitted by full-service stations proceeding to the Audio Division for further consideration. With a 54-dBu threshold, full-service stations would be left without a remedy for translator interference 94% of the time.

If the 54-dBu threshold is replaced with a 48-dBu threshold, the full-service stations fare no better. Under a 48-dBu interference remediation threshold, 90% of all translator conflicts would be automatically excluded right out of the gate, with only 10% of the conflicts passing to the Audio Division for further consideration. With a 48-dBu threshold, full-service stations would be left without a remedy for translator interference 90% of the time.

If there is a concern about some full-service stations claiming coverage beyond what is reasonable, the best solution is NOT an arbitrary F(50,50) translator remediation threshold. Rather, the Commission should use Longley-Rice for the purpose of determining whether or not the full-service station should be allowed to claim a listenable signal within the proposed translator's 60-dBu contour.

Nevertheless, if the FCC insists on setting a "drop dead" interference remediation contour beyond which interference remediation of a full-powered facility would no longer be possible, it is submitted that such a "drop dead" dBu contour should apply to either the standard F(50,50) contour, OR the contour calculated using the Longley-Rice propagation prediction method.

If the FCC is to adopt a “drop dead” F(50,50) remediation standard, an appropriate level must be selected in accordance with relevant engineering considerations. According to numerous sources, including the 2013 NAB Engineering Handbook, the USA Digital Radio Report, NRSC, Nielsen, the ITU, Ofcom, and the BBC, a 34-dBu signal provides good quieting in nearly all automobile and portable radios. Thus, based upon sound engineering practice, an appropriate drop-dead level for interference remediation is an F(50,50) level of 34 dBu.

Although not ideal, a 34-dBu F(50,50) threshold would adequately compensate for situations where the predicted Longley-Rice signal is much stronger than the F(50,50) predictions would indicate. As described previously, it is not unusual or unique for a station in irregular terrain to serve a given area with a 60-dBu or better signal as indicated by Longley-Rice, whereas F(50,50) predictions would indicate a substantially lower signal level on the order of 33 or 34 dBu. In these scenarios, the measured signal strength conforms closely to the Longley-Rice predictions, and not the F(50,50) curves, and the signal is loud, clear, and consistent. In many cases, a line-of-sight path is involved.

Respectfully submitted,

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