TECHNICAL STATEMENT
COMMENTS TO PETITIONS FOR RECONSIDERATION
IN MB DOCKET 09-52

Technical Statement

This Technical Statement provides comments in response to the Federal Communications Commission December 12, 2011 Public Notice of the filing of several Petitions for Reconsideration in MB Docket 09-52, In the Matter of Policies to Promote Rural Radio Service and to Streamline Allotment and Assignment Procedures. Specifically, these comments will address the technical calculation of the number of aural reception services.

The firm of *du Treil, Lundin & Rackley, Inc*. (dLR), and its predecessors, have provided consulting engineering services to the broadcasting industry for over 70 years. This includes assisting broadcasters in preparing hundreds of applications for radio facility operation, such as those contemplated in MB Docket 09-52.

Within the *Second Report and Order* in MB Docket 09-52, the Commission states the service gain or loss areas created as the result of a station modification via a community of license modification will be more closely analyzed. Specifically, the number of available reception services is required to be broken out in detail for areas with five or fewer of such reception services. However, the Commission is silent in this proceeding on how to calculate such reception services. It is noted one of the Petitions for the Reconsideration in MB Docket 09-52 states "…the Commission should clarify what constitutes reception service."[1]

[1] Mark N. Lipp, for Wiley Rein LLP, on behalf of Radio One, Inc. et al, May 6, 2011.

Based upon dLR's years of expertise in calculating service areas for broadcast stations, we suggest the following procedures and contour values be used to calculate reception services:

- FM Reception Service Definition
  - Authorized facilities for all licensed and/or permitted facilities in both reserved and non-reserved bands
  - Assumed maximum facilities for the allotted station class shall only be employed for vacant FM allotments
  - Protected contours as defined by Section 73.215(a)(1) of the Commission's Rules for non-reserved band stations
  - Protected contours as defined by Section 73.509(a) in the Commission's Rules for reserved band stations
  - Standard prediction methodology calculated pursuant of Section 73.313 of the Commission's Rules
- AM Reception Service Definition
  - 2 mV/m daytime groundwave contour for all classes of stations
  - Weighting function shall be used by different Classes of AM stations to account for full-time operation
    - Class A [clear channel] stations shall employ a weighting value of 1.0
    - All other classes [B, C and D] shall employ a weighting value of 0.5

FM Reception Service Definition

We suggest that the actual authorized facilities be used to characterize the service for full-service FM broadcast stations. As the FM band is a mature service with relatively limited opportunities to modify service, most stations have RF transmission facilities maximized as much as the applicable regulations [either FCC, local and/or FAA limitations] would allow. Therefore, it is appropriate to consider the available reception service from FM stations as those defined by their presently authorized facility.[2] The only exception would be for vacant FM allotments.

[2] This is certainly already the case to define the reserved [non-commercial] band stations and AM stations by their actual facilities.

As for vacant allotments, it is proposed the maximum facilities for its allotted station class should be assumed. While it can be suggested these vacant allotments may produce overly optimistic reception service, it should be noted that the vacant allotment inventory is being quickly purged and will essentially soon become a moot issue relating to the impact of reception services. There are approximately 400 vacant allotments left in the FCC inventory. It is noted that about once a year, the FCC auctions about 100 vacant allotments. Far fewer than 100 vacant allotments are added to the FCC inventory in any of the past recent years. Therefore, in less than 5 years, there will only be a handful of vacant allotments remaining in the FCC inventory that has not gone through at least one auction cycle.

The protected contours of FM stations shall be defined as Section 73.215(a)(1) for non-reserved band stations and Section 73.509(a) for reserved band stations. The standard FCC methodology for calculating coverage contours, contained in Section 73.313 using the standard height above average terrain calculations using the appropriate terrain databases shall be employed, even for vacant allotments. As terrain databases are employed, it is evident that the contour will be calculated using non-uniform terrain.[3]

AM Reception Service Definition

It is suggested the 2.0 mV/m groundwave contour value from the daytime operating mode be employed to characterize the reception service from AM broadcast stations. The 2.0 mV/m contour value has long been required by the FCC to define service to urbanized areas and places of greater than 2,500 population when doing population counts for comparative analysis. For good reason, too, because it recognizes the limitation of man-made noise on AM reception. We believe that the man-made noise environment has worsened considerably since this requirement was initiated, with the

[3] The Commission has sometimes used "uniform" terrain (creating perfect circles) to calculate reception service contours for FM stations. The "uniform" terrain assumption reduces the accuracy of the analysis and hence is why actual terrain should instead be employed for the contour calculations.

introduction of many more types of electrical and electronic devices that emit noise – including the replacement of incandescent lighting with fluorescent lighting in typical homes - while, at the same time, urbanized areas and places of greater than 2,500 population have overtaken much formerly rural area. We believe that the distinction between 2.0 mV/m and 0.5 mV/m coverage for AM service is obsolete and can be discarded to simplify the process – eliminating the need to map areas differently based on population counts and urbanized area status.

Historically the Commission has just determined the number of reception services based upon the service provided by full-time stations. Daytime-only AM stations were not generally considered in the analysis. Fulltime AM stations, other than Class A stations, have nighttime coverage areas that are smaller than the areas they cover in the daytime because of the service limitations of incoming nighttime interference from other stations. Analyzing nighttime coverage for non-Class A stations is complicated, as it is necessary to calculate incoming nighttime skywave interference from multiple other stations in a root-sum-squared additive process and the nighttime interference-free coverage areas of stations using directional antennas, as virtually all Class B stations do, generally have very irregular shapes. In the past, the AM nighttime service has been avoided in preparing "other services" analysis if a sufficient number of simpler-to-calculate contours (FM contours, which tend to be circular in shape, for instance) were present. We believe that, with the multiplicity of other electronic modes of reception that are available fulltime today, including non-broadcast devices that receive programming, the need for tedious AM nighttime service studies are unnecessary in "other services" analysis. Nevertheless, as non-Class A AM stations do provide some level of service, it seems appropriate they should be considered in some fashion and not simply ignored.

It is observed that AM stations now are eligible to employ a full-time FM translator [if such a FM translator channel is available] within its 2 mV/m daytime contour – but that the nighttime coverage thus obtained cannot be expected to replicate the total daytime service area. Also, the majority of AM stations now have some level of nighttime power operation, perhaps at a low secondary operating power. This, along

with FM translator service, militate toward some recognition of service from even AM daytime stations in "other services."

While it seems reasonable that AM stations other than Class A should not be 100 percent attributed by their daytime 2 mV/m contours in comparison with other stations' fulltime service, it seems appropriate to count, or weight, the station by one-half of that of a full-time station. Therefore, we suggest a novel approach that all classes of AM stations, other than Class A, be weighted to 50% of that of full-service station. Class A [clear channel] stations will continue to be considered as a full-time station.

The use of this weighting function may seem to complicate the other service calculations. However, we suggest that this procedure could be completed without too much additional expense by using the standard computerized GIS mapping software that most consultants employ.

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