

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

In the matter of:

Revitalization of the AM Radio Service)	
)	MB Docket No. 13-249
Further Notice of Proposed Rulemaking)	

**REPLY COMMENTS OF THE
ASSOCIATION OF FEDERAL COMMUNICATIONS
CONSULTING ENGINEERS**

The Association of Federal Communications Consulting Engineers (“AFCCE”), celebrating 68 years in existence, is an organization that includes approximately 60 full members who are Registered Professional Engineers, most engaged in the practice of consulting engineering before the Federal Communications Commission (“FCC”), and well over 100 members in allied fields of endeavor.

The AFCCE membership includes many engineers and firms having an extensive history of innovation and development in AM broadcasting. Since 1948, AFCCE members have represented myriad AM station licensees and applicants seeking to build AM stations before the FCC. This representation has included performing allocation studies, design of antennas and facilities, preparation of construction permit and license applications, analysis of coverage and interference, and testimony in hearings and other proceedings before the FCC.

The AFCCE herein offers its views, as a matter of clarification, on the terminology used in certain comments filed by the AM Radio Preservation Alliance in response to the FCC’s Further Notice of Proposed Rulemaking (“FNPRM”) that was issued as Item IV-3 of the First Report and Order in the above-captioned proceeding on October 21, 2015.

In its discussion of the impacts of the FCC’s proposed plan to reduce the protected daytime primary service contour for Class B, C and D AM stations to the 2 mV/m contour, the AM Radio

Preservation Alliance (the “Alliance”) employs an inappropriate definition of interference in identifying the areas where interference would be caused to the signals of Class B, C, and D stations. The Alliance’s analysis portrays a much larger area of interference than would necessarily be the case if desired/undesired ratios were analyzed.

Specifically, in the maps supplied as Exhibit Q of its Comments, the Alliance labels all areas within the intersection (overlap) of the defined service and interfering contours as an “interference area,” when a more appropriate label would be “prohibited overlap.” In fact, interference areas tend to be crescent shaped and much smaller than the area where the desired and undesired signal contours overlap. While the specific outcomes of the Commission’s proposals require individual analysis of each station potentially impacted, *actual* interference exists only where the level of the desired signal does not exceed the minimum ratio referenced to the undesired signal within the contour overlap area.ⁱ

Minimum signal level ratios, which are now commonly called desired-to-undesired (“D/U”) ratios in communications engineering, were specified for AM stations by the FCC in 1939.ⁱⁱ Interference analysis, when performed manually, requires that multiple desired signal contours with stepped increases in field strength be plotted on a map inside the defined service contour along with undesired signal contours stepped to correspond to the desired contours by the minimum ratio. It is a process of “connecting the dots” where the corresponding desired and undesired contours cross to find the inner boundary of the interference area. The outer boundary is the service contour of the desired station.

The FCC used such interference analysis to allot spectrum for use by individual AM stations from 1939 until 1964, when a “go/no-go” approach was adopted based on whether or not the interfering and service contours intersected at all.ⁱⁱⁱ The go/no-go approach was adopted for administrative convenience and because the emphasis for development of new service had shifted to the FM band at that time. The FCC did not change the definition of interference in 1964. Rather, it just became unnecessary to analyze it in the context of station applications. In contrast, analysis of interference based on D/U ratios was always required in comparative hearings when establishing the service areas of the different proposals being compared. In 1986, the FCC suggested that a return to D/U-based interference analysis, instead of the simple avoidance of contour overlap, be considered in certain cases.^{iv}

AFCCE cautions that the FCC and others recognize that the mis-interpretation of overlapping contours as areas of interference can result in significant over estimates of the extent of such interference. AFCCE appreciates the Commission's consideration of these reply comments in this Proceeding, and commends the Commission for its commitment to the long-term viability of AM radio broadcasting.

April 17, 2016

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Respectfully Submitted,



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ⁱ *Standards of Good Engineering Practice Concerning Standard Broadcast Stations*, Federal Communications Commission (Washington, 1939), p. 7

ⁱⁱ *Ibid.*, Table V

ⁱⁱⁱ *Report on the Status of the AM Broadcast Rules*, Federal Communications Commission (Washington, 1986), p. 15

^{iv} *Ibid.*