

BEFORE THE
Federal Communications Commission
WASHINGTON, DC 20554

In the Matter of)
)
Revitalization of the AM Radio Service) MB Docket No. 13-249
) FCC 15-142
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To: The Commission

**COMMENTS OF THE
CRAWFORD BROADCASTING COMPANY**

Crawford Broadcasting Company (“Crawford”) and its affiliates are licensees of 14 AM commercial broadcast stations¹. As such, we have great interest in the Commission’s efforts to revitalize the AM Radio Service, and we applaud the Commission’s efforts in this matter. We tender the following comments in response to the Further Notice of Proposed Rulemaking contained in the First Report and Order, Further Notice of Proposed Rule Making, and Notice of Inquiry in the proceeding.

A. Change Nighttime and Critical Hours Protection to Class A AM Stations

We recognize the role that Class A AM stations have played in the history and development of the broadcast medium. In the early days of broadcasting, Class A (then Class I) stations provided wide-area service daytime and in many cases provided skywave service to large portions of the nation at night. Signals from these stations provided the only broadcast service available in many areas and communities and as such, the service they provided was of great value and rightly received a high level of interference protection.

That situation has totally changed over the years. Even the smallest communities generally receive service from multiple broadcast outlets. In short, the purpose of the longstanding protections to Class A stations no longer exists. Were the AM Radio Service being rolled out as new today, there is little doubt that no class of station would receive the protections that Class A stations receive as incumbents today.

With the purpose no longer in place, the question then becomes one of the greater good in pursuit of the public interest. We believe that local audiences would receive a much greater benefit from the 24-hour and higher-power operation of their local stations than distant audiences would from the skywave service of out-of-market Class A stations.

¹ Crawford AM affiliates include KBRT, Costa Mesa, CA; KNSN, San Diego, CA; KCBC, Manteca, CA; KKPZ, Portland, OR; KLZ/KLDC, Denver, CO; KLTT, Commerce City, CO; KLVZ, Brighton, CO; WDCX/WDCZ, Buffalo, NY; WYDE/WXJC, Birmingham, AL; WEXL, Royal Oak, MI; WRDT, Monroe, MI

While it would be impossible to determine in advance what the actual listenership of local Class D and Class B stations would be in the nighttime hours were they allowed to operate without protecting the skywave contours of Class A stations, the opportunity for the public to listen to those stations would increase dramatically; that opportunity either does not exist at all now or is available in only limited areas due to reduced power and directional patterns. That additional opportunity could well make the difference between a local station's viability and its demise, between a station breaking even or turning a profit and operating at a loss. This is particularly true in higher latitudes where important drive-time dayparts are cut very short by later sunrise and earlier sunset times in winter months.

We thus support the elimination of Class A skywave service contour protection from co-channel stations.

In the NFPRM the Commission tentatively concludes that Class A stations should be protected to the 0.1 mV/m groundwave contour². We disagree with this conclusion. The Commission recognizes that the effects of increased environmental and manmade noise has rendered even the 0.5 mV/m contour useless in many locations³. If the 0.5 mV/m contour is useless, then much more so the 0.1 mV/m contour in today's noisy listening environment. This is even more the case during the transition hours, when rising skywave propagation brings in distant signals, including noise, and more manmade noise is produced by electric lights that would not be in use during full daylight hours. While we recognize that there are some rural locations where perhaps signal levels below 0.5 mV/m might be listenable, by nature those locations would be sparsely populated. Again, the question then becomes one of the greater good in pursuit of the public interest.

We do see the value of Class A stations providing wider area coverage during emergencies, and as such we do believe that protection of Class A stations to the 0.5 mV/m groundwave contour from co- and first-adjacent-channel interference, both day and night, is reasonable. Protection ratios should be those applicable to other classes of stations. We agree with the Commission that critical hours protection of Class A stations should be eliminated completely.

B. Change Nighttime RSS Calculation Methodology

Since the 1991 AM rule change, we have found it much more challenging to make nighttime facility improvements because of the RSS calculation methodology implemented in that proceeding. We have not seen any benefit from the revised RSS calculation methodology. Our observation is that manmade and atmospheric noise has become the bigger issue in the years since the change was implemented, and requiring tighter protections as a result of the RSS calculation methodology has only added insult to injury. Further, we have found no benefit in considering first-adjacent-channel stations in interference calculations. In fact, this sometimes results in increased interference.

As such, we support and endorse the Commission's proposal to roll back the 1991 rule changes as they pertain to calculation of nighttime RSS values of interfering field strengths and nighttime interference-free service. We also support and endorse the proposal to return to predicting the nighttime interference-free coverage area using only

² Order at 56.

³ Order at 64.

the interference contributions from co-channel stations and the 50-percent exclusion method.

We would also propose that the FCC standardize calculation of nighttime interference protection for class B and C stations to use only site-to-site RSS calculations. This method is easily accommodated in computer-based nighttime interference studies and it is the consensus standard in the industry today. However, as far as we know, the option still exists for clipping studies to be required in contested cases. The reality in this day and age is that clipping studies and the directional patterns produced to accommodate their results are not worthwhile; noise levels are too high for any real difference to be realized. We would encourage the Commission to codify the site-to-site method as standard and eliminate the use of clipping studies altogether.

C. Change Daytime Protections to Class B, C and D Stations

As with the change in RSS calculation methodology, we have found the 1991 rule changes with respect to daytime protection ratios to be constraining. In particular, the first-adjacent 6 dB D/U ratio has been troublesome. Grandfathered overlaps exist everywhere, and even the most minor daytime facility changes require careful study to insure that the overlap area is not increased. Many if not most of these situations, where the ratio still at the pre-1991 0 dB value, would have white space between protected and interfering contours.

We support and endorse the Commission's proposal to revise Section 73.37(a) of the Rules to restore the 0 dB first-adjacent protection ratio, change the second-adjacent prohibited overlap to 25/25 mV/m, and eliminate third-adjacent channel protection.

For more than a decade we have observed the noise floor in the AM broadcast band rise to the point where a protected 0.5 mV/m contour is no longer listenable in most locations. We have a great deal of firsthand experience with this phenomenon.

In the mobile listening environment, which is often the primary place where listeners tune in to AM broadcasts, the noise source is often the automobile itself in which the receiver is located, with its numerous onboard computer systems and wiring harnesses. The advent and standardization of low-profile antennas has only exacerbated this problem with the mobile listening environment, reducing the amount of desired signal received by the small-aperture antenna. Together this has created the "perfect storm" for rendering even relatively strong signals unlistenable or at the very least, reducing the signal-to-noise ratio of the recovered audio to an objectionably low value.

Fixed receivers arguably have an even greater challenge. The small ferrite bar or loop antennas contained in many tabletop and portable radios and the wire loop antennas used by other receivers tend to be insensitive and highly directional, making it difficult to achieve reception of different stations without re-orienting the radio or antenna. Off-axis noise sources are ubiquitous and include compact fluorescent lights (CFLs); computers, routers, switches and network cabling; radiation from nearby flat-screen televisions and their power supplies; switching power supplies for all kinds of devices; and of course the aging power grid. Even strong signals often have a hard time competing with strong local noise sources from unintentional radiators.

As such, the current protected contour value is well below the value needed for clear reception of an AM signal in most fixed and mobile locations, and we believe protecting that low contour value is both pointless and counterproductive. Increasing the normally protected contour to 2 mV/m would not only establish a meaningful value for the contour in today's noise-ridden environment but it would also permit many stations to increase power or let out their directional patterns and provide listeners with stronger signals to overcome the noise.

We therefore support and endorse the proposed change in the daytime primary service contour for class B, C and D stations to 2 mV/m.

It was noted that there was not proposed in the Order and Notice any change in the 1 kW power cap for class C stations contained in §73.182(c)(1). We believe that a change is warranted for a number of reasons.

If the daytime protected contour of class C stations will be increased to 2 mV/m as proposed, interference to those stations by class B and class D stations will in many cases increase. Class C stations should be afforded the opportunity to increase power to maintain coverage areas.

Further, the same factors noted above regarding noise floors and signal levels needed to overcome them also apply to class C stations. The same reasoning that would permit class B and D stations to increase power by means of an increase in the daytime protected contour value should also apply to class C stations. The difference is that class C stations are capped at 1 kW as noted above.

Class C (then class IV) stations were originally allocated a 250 watts and protected the 0.5 mV/m contours of other class C stations. When the increase to 1 kW was authorized in 1984, the de facto daytime protected contour between class C stations became 1 mV/m. If we change the daytime protected contour of class B, C and D stations to 2 mV/m as proposed, a fourfold power increase for class C stations would be indicated to maintain existing interference-free coverage areas.

There are likely situations where class C stations could increase daytime power further while maintaining protection of spectrum neighbors to the 2 mV/m contour. As such, we propose that the power cap for class C stations contained in §73.182(c)(1) be increased to 5 kW daytime.

D. Revise Rule on Siting of FM Cross-Service Fill-In Translators

Crawford and its affiliates do not have any cross-service fill-in translators, and a primary reason is that we have been unable to site any available translator such that it would provide meaningful service to areas of desired coverage. The existing siting rules are simply too restrictive to allow us to take advantage of the permitted use of cross-service translators. While we do not have direct knowledge of such, we strongly suspect that the same is true of other AM licensees as well.

Permitting cross-service fill-in translators to be sited within the greater of either the 2 mV/m daytime contour of the AM station or a 25-mile radius centered on the AM transmitter site would lift this restriction and provide the needed flexibility, and as such we support this proposed modification. We do not, however, support the restriction on the

translator's 1 mV/m coverage contour to a 40-mile radius centered on the AM transmitter site. There are cases where an AM station's 2 mV/m contour extends well beyond 40 miles and significant population clusters are located in those areas beyond 40 miles but within the 2 mV/m contour. These population clusters are, in some cases, key to a station's economic viability.

We would thus encourage the Commission to adopt the proposal to allow siting of fill-in cross-service translators within the greater of the 2 mV/m daytime contour of the AM station or a 25-mile radius centered on the AM transmitter site without the 40-mile restriction on the translator's 1 mV/m contour.

E. Modify Partial Proof of Performance Rules

Through the years, Crawford has run many partial proofs of performance. The change to the rules reducing the number of points and the number of radials required for a partial proof was very helpful, reducing the amount of driving and reducing the effort to document the measurements.

We do, however, question the need to make measurements on unmonitored radials. It has been our experience that problems with a directional pattern will appear in the monitored radials, as those are usually the deepest nulls with the vectors stacked nearly equally in amplitude and opposite in phase. That being the case, we believe that a partial proof of performance measuring only the monitored radials will adequately demonstrate that the directional pattern is properly adjusted.

Requiring measurements only on monitored radials will reduce the costs associated with partial proofs of performance in fuel, labor and documentation. This will have a particular impact on smaller AM operations where even a few hundred dollars saved is a significant amount.

As such, we support the Commission's proposal to modify Section 73.154(a) to require measurement of only monitored radials in partial proofs of performance.

F. Modify Rules for Method of Moments Proofs

Crawford was among the first to take advantage of the rules permitting the method of moments (MoM) to be used to prove the proper adjustment of AM directional antennas. To date we have licensed eight facilities pursuant to these rules, and we have performed biennial sample system recertification measurements on these facilities numerous times in the years since those facilities were licensed using MoM proofs. We have learned a great deal in the performance of these recertification measurements, to wit:

- Base sampling current transformers tend to be very stable unless damaged by lightning or the elements. Typically, lightning damage results in a change in the value of the internal 50-ohm terminating resistor in the sample transformer. Such changes will be evident in the measurement of the terminated impedance of the sample transmission line. Damage from the elements, such as water, would also very likely appear in the terminated sample line measurements. As such, we believe the requirement to remove and test base sampling devices to be an unnecessary step, and we endorse the proposal to eliminate it.

- In the process of making biennial recertification measurements, we have seen considerable variation in field strengths at the reference field strength measurement locations. These variations are no doubt attributable to all the various factors discussed in the 2008 proceeding and ad hoc committee activities that preceded it. Since there is no requirement to take any action when the measured field at a point departs from the initial value, re-measurement of those fields has no value whatsoever. Further, the time, labor and fuel required to make those measurements is significant and represents a significant cost to AM stations. While we do support the making of reference field measurements as part of the initial license application process, we do not support retaining the requirement for biennial re-measurement of those points and strongly encourage the Commission to delete that requirement.
- In late 2009, the Media Bureau released a Public Notice⁴ dealing with a number of issues related to MoM proofs of performance. In this notice, the bureau recognized that it is not necessary for facilities that were formerly licensed using conventional means to obtain and submit a surveyor's certification of the array geometry. We support the proposal to eliminate this requirement from the rules for such facilities as long as the array geometry is not being modified and no new towers are being added to the array.
- The wording contained in Section 73.151(c)(1)(viii) stating "...in no case will their total capacitive reactance be less than five times the magnitude of the tower base impedance without their effects being considered" is unclear. The verbiage should be revised to clearly state that this only applies when the total capacitance used to model base region effects exceeds 250 pF, and only when base current sampling is being employed.
- We have done some modeling of skirted towers for design purposes and our experience is that it is difficult to accurately model a skirted tower. In addition to issues with the modeled skirt wires producing incomplete shielding of the tower wire(s), driving a skirted tower from a single point using a communing ring as is the common feed method in practice presents a particular problem for the modeler. Such models tend to produce wildly imbalanced currents in the skirt wires and the resulting modeled drive point impedances are very inaccurate. There are workarounds for these issues, but it is difficult in our experience to bring those workarounds into a directional model. We believe that until the engineering community has more experience with such, it would not be wise to permit use of MoM modeling for skirt-fed towers in AM directional arrays.
- It is not uncommon for antennas and other hardware to be added to or removed from a tower as a matter of course. The MoM rules should have a provision clearly stating the circumstances under which the directional array of which such a tower is part should have to be re-proofed. The Media Bureau has, as far as we know, been applying a policy that if the impedance of the tower after modification is within the tolerance provided in the MoM rule (± 2 ohms and $\pm 4\%$ for resistance and reactance), a new proof is not required. This policy makes sense and provides a bright line with which it is easy for licensees to determine whether re-proofing is required. We believe that the Commission should codify this policy

⁴ DA 09-2340, "Media Bureau Clarifies Procedures for AM Directional Antenna Performance Verification Using Moment Method Modeling," Released October 29, 2009

G. Require Surrender of Licenses by Dual Expanded Band/Standard Band Licensees

As stated in the Notice, the Commission's intent when opening the Expanded Band was to remove interference from the Standard Band and provide those stations with more robust, interference-free service in the Expanded Band⁵. A five-year "sunset" period was established, and many Expanded Band licensees (including Crawford affiliate KPHP Radio, Inc.) did surrender the Standard Band licenses of the parent stations.

It was with considerable dismay that as the sunset period came to a close, we observed good number of licensees petition the Commission and be granted authority to continue to operate both Expanded and Standard Band stations. Many of those stations are still operating to this day, more than fifteen years later.

We believe that the Commission should require dual Expanded Band/Standard Band licensees to surrender one of the two authorizations, thus completing the migration to the Expanded Band.

H. Provide AM Major Change Filing Window

It has been eleven years since the last AM major change window. In the years since there have been granted many minor changes, and the overall landscape on many AM channels has changed considerably as a result of these minor changes, stations going dark or moving to different frequencies. As a result, opportunities likely exist for a good number of stations to make significant improvements to their facilities that would fall into the category of "major changes," which must be made during FCC-designated filing windows.

We believe that the Commission should designate an "upgrades only" AM major change filing window for the express purpose of providing existing AM station licensees an opportunity to upgrade their facilities, taking advantage of rule changes enacted in this proceeding as well as the aforementioned AM landscape changes. Optionally, the FCC could for a specified period of time permit any currently licensed AM station to move to any Standard Band frequency to facilitate an upgrade.

Respectfully submitted,
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⁵ Notice at 75.