

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of)
)
Amendment of Parts 73 and 74 of the)
Commission's Rules to Establish Rules for) MB Docket No. 03-185
Digital Low Power Television and Television)
Translator Stations)
)

COMMENTS OF
THE NATIONAL ASSOCIATION OF BROADCASTERS

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THE NATIONAL ASSOCIATION OF BROADCASTERS**

I. INTRODUCTION AND SUMMARY

The National Association of Broadcasters (NAB)¹ hereby submits comments on the Fifth Notice of Proposed Rulemaking concerning various options for use of TV channel 6 spectrum (82–88 MHz), including the provision of analog FM radio services by channel 6 digital low power television stations (also known as “FM6” stations) and related matters. Channel 6 television stations provide critical service and to continue to do so, television service must have unconstrained primacy in that spectrum. NAB further submits that the existing 13 FM6 stations in that spectrum have developed a listener base, with no reports of interference, and therefore should be allowed to continue operation as presently authorized. NAB is aware of no new technical studies that would support elimination or revision of the current channel 6 distance separation rules for the various classes of FM service operating on

¹ NAB is a nonprofit trade association that advocates on behalf of local radio and television stations and also broadcast networks before Congress, the Federal Communications Commission and other federal agencies, and the courts.

reserved band FM Channels 201-220 and believes such studies must be a prerequisite to any expansion of FM6 stations.

II. CHANNEL 6 IS CRITICAL SPECTRUM FOR THE TELEVISION BROADCAST SERVICE.

The Commission should continue to recognize the necessity and primacy of VHF-Low Band frequency spectrum (54–72 and 76–88 MHz) for television broadcast, particularly as the UHF spectrum available for television broadcast has been dramatically reduced in recent years.² As shown on the map below, there are presently 98 television stations authorized to operate on channel 6 in the United States. While some of these stations serve large, sparsely populated areas where the relatively low power consumption of channel 6 transmitters makes the provision of television service economical to rural Americans, others serve densely populated urban areas where no alternative channels exist in more desirable spectrum (*i.e.*, VHF-High Band and UHF TV channels). A number of channel 6 stations also serve as “lighthouse” stations for NextGen TV, providing a critical transition path for television broadcasters as they migrate to ATSC 3.0.

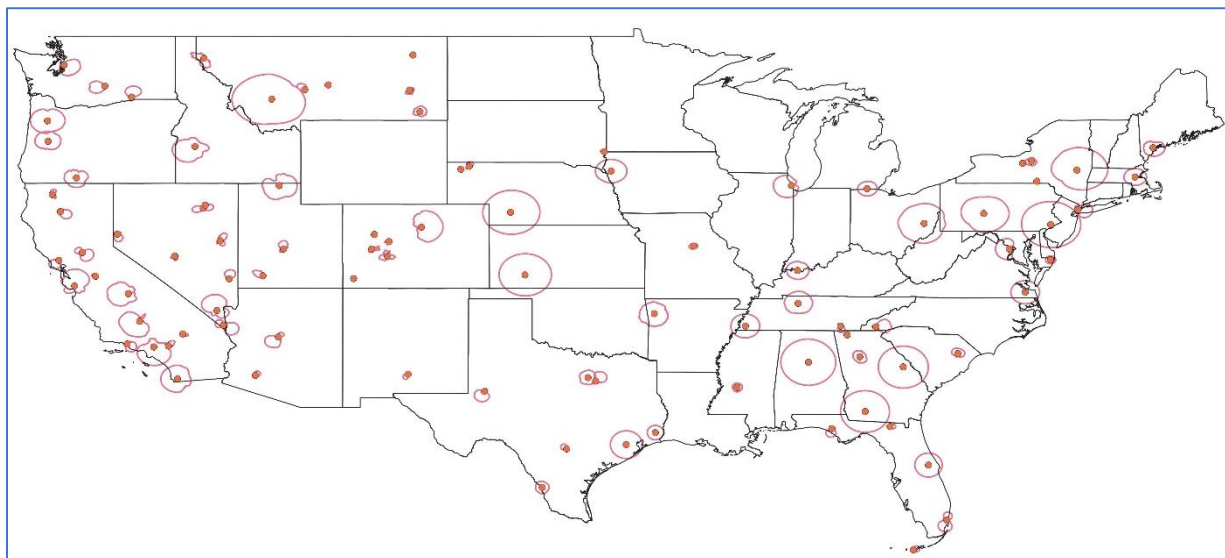


Figure 1. Map showing authorized Channel 6 television stations in CONUS.

² See generally *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, GN Docket 12-268.

NAB recognizes that there may be a desire for additional FM channels in some markets, for example, to provide translator outlets for AM stations or to relieve crowding in the FM band. However, the minimal relief afforded by a limited repurposing of TV channel 6 to the FM service in areas where there are presently no channel 6 stations is unlikely to outweigh the potential costs.

First, many of the geographic areas where the FM band is most crowded are the same areas where channel 6 television stations operate, leaving no available channels in an “expanded” FM band. Second, even beyond the areas served directly by channel 6 television stations, TV Translator stations may receive transmissions from channel 6 television stations, effectively enlarging the required exclusion area for FM expanded band operations.³ Third, while NAB appreciates the suggestion that repurposing TV channel 6 could increase the opportunities for diverse providers in rural parts of the country,⁴ many rural areas already have FM channels available, whether for full-power or low-power FM stations, so there is little justification to create an expanded FM band of 30 channels in such areas. Experience with the Commission’s auctions of FM broadcast licenses has shown that demand for new FM stations is greatest in areas of high population density, with rural areas often failing to meet even reserve bid amounts (for commercial stations) or attracting any non-commercial applicants (which are not subject to auction payments).⁵

³ Currently, there is at least one TV Translator station that receives its programming from a Channel 6 television station.

⁴ *Amendment of Parts 73 and 74 of the Commission’s Rules to Establish Rules for Digital Low Power Television and Television Translator Stations, Fifth Notice of Proposed Rulemaking*, MB Docket No. 03-185 (rel. June 7, 2022) (Fifth NPRM), at ¶45.

⁵ *Reexamination of the Comparative Standard for Noncommercial Educational Applicants; Association of America's Public Television Stations' Motion for Stay of Low Power Television Auction (No. 81)*, Second Report and Order, 18 FCC Rcd 6691, 6699-6701 (2003) (NCE

Authorization of new FM stations in an FM expanded band created from television spectrum could also preclude new television stations. As discussed above, there are already some channel 6 television stations serving as ATSC 3.0 lighthouse facilities, and additional such facilities may be needed as the rollout of NextGen TV progresses. The opposite need may exist near the end of the ATSC 3.0 transition. That is, DTV “nightlight” facilities on channel 6 may be needed to help ensure that legacy viewers still receive a signal. As television broadcasters voluntarily transition to ATSC 3.0 with no additional spectrum allocated by the Commission, it is important that existing television spectrum be preserved to help make this difficult transition as efficient as possible. Further, as the Commission has observed,⁶ consumer FM receivers cannot tune below 87.7 or 87.9 MHz and cannot be upgraded to do so, creating a massive legacy receiver base that cannot tune to most expanded FM band channels and discouraging FM broadcasters to propose operation in an expanded FM band. The expansion of the AM band 25 years ago may serve as a cautionary tale, with many of the expanded band channels originally allocated still fallow.⁷ NAB thus urges the Commission to reject NPR’s proposal to repurpose television channel 6 spectrum for FM services.

Second Report and Order); see *also* 47 CFR § 73.5002(b). For example, 38 of 135 new FM channels offered in Auction 109 were unsold.

⁶ Fifth NPRM at ¶48

⁷ The FCC authorized 88 stations in the expanded AM band. Public Notice, *Mass Media Bureau Announces Revised AM Expanded Band Allotment Plan and Filing Window for Eligible Stations*, DA 97-537 (Mar. 17, 1997). 52 stations are licensed as of July 7, 2022. See <https://www.fcc.gov/media/radio/am-query>

III. THE 13 EXISTING FM6 STATIONS SHOULD BE ALLOWED TO CONTINUE TO OPERATE AS PRESENTLY AUTHORIZED AS ANCILLARY OR SUPPLEMENTARY SERVICES

NAB agrees with FM6 supporters that there have been no reports of interference from FM6 stations over ~~their~~ its over 20-year history,⁸ likely due to the Commission's longstanding requirements for protection of channel 6 television stations.⁹ Loyal audiences have developed around some FM6 stations during this period and NAB believes permanent authorization of those established services is warranted and would serve the public interest. It seems certain, however, that those 13 FM6 stations might impact FM stations operating in the reserved band (88–92 MHz), other channel 6 television stations, or their own TV6 video services, if they are allowed to arbitrarily modify their operations, for example, by increasing power, relocating, or adding Subsidiary Communications Services¹⁰ or In-Band On-Channel digital audio broadcasting services to their signals. There are presently no regulatory requirements that directly address FM6-to-reserved band FM (or other) interference and NAB submits it is critical to avoid increasing the risk of interference without a technical record to justify expanded uses. NAB therefore urges the Commission to restrict FM6 operations to the 13 FM6 stations as presently authorized.

Because FM6 stations are associated with television stations in a spectrum band that is allocated solely to the television service,¹¹ the analog FM6 signal can only be considered ancillary or supplemental to the television service. NAB supports the proposed requirements that the channel 6 television (TV6) operation transmit rule-compliant ATSC-3 video and

⁸ Fifth NPRM ¶7-8. The earliest known FM6 operation was KZND-LP, Anchorage, dating from 1999. See <https://en.wikipedia.org/wiki/KNIK-LP>

⁹ 47 CFR §73.525

¹⁰ *Id.* at §73.295

¹¹ *Id.* at §2.106

associated audio at all times the associated FM6 is in operation and that that the FM6 coverage area and populations may not exceed that of the TV6 operation.¹² NAB believes that the proposed requirement that, “no interference is permitted to any other licensed user” is unnecessary if FM6 operations are limited to the 13 existing stations.¹³ Further, we submit that a demonstration of equivalent coverage should be required at the application stage, rather than at 90 and 180 days from authorization and that interference reporting requirements are unnecessary if FM6 operations are limited to the 13 existing stations.¹⁴ Finally, the restrictions on assignment or transfer of ownership seem unnecessary since the ownership attribution rules should apply whether or not the channel 6 television station includes FM6 operation.¹⁵

IV. FM6 STATIONS MUST NOT DEGRADE ATSC 3.0 SERVICE AND MUST COMPLY WITH EAS RULES

FM6 operations associated with ATSC 3.0 television stations are able to operate in part by narrowing the bandwidth of the ATSC 3.0 transmission.¹⁶ The degree of narrowing is permitted by the ATSC 3.0 standard,¹⁷ albeit not for the purpose of accommodating an analog FM analog carrier within TV channel 6. NAB therefore disagrees with claims that FM6 operations are covered by the ATSC A/322 standard.¹⁸ Because a reduction in the occupied bandwidth of the DTV signal is necessary, according to the Shannon-Hartley theorem, the

¹² Fifth NPRM at ¶28.

¹³ *Id.* at ¶24.

¹⁴ *Id.* at ¶15.

¹⁵ *Id.* at ¶13.

¹⁶ Reply Comments of Preserve Community Programming Coalition (PCPC), MB Docket No. 03-185, Exhibit B at p.49 (Erratum, Feb. 6, 2020) (Perry Priestly Study).

¹⁷ ATSC Standard A/322 page 69 (Table 7.1), available at www.atsc.org.

¹⁸ Fifth NPRM at ¶26.

bandwidth reduction will necessarily result in a reduction of the capacity (throughput) of the ATSC-3 signal.¹⁹ While this trade-off appears tolerable at the present time,²⁰ NAB observes that television broadcasters are at an early stage of ATSC 3.0 roll-out and future conflicts between ATSC 3.0 TV6 and FM6 operation must be resolved in favor of the television service.

To accommodate FM6 analog operation near 87.7 MHz with the 75 kHz frequency deviation used by FM broadcast stations, the narrowed ATSC 3.0 signal must be offset in frequency from the center of Channel 6.²¹ This frequency offset is not recognized in the ATSC 3.0 standard and consumer television receivers may not be able to properly receive such offset TV6 transmissions as a result. While there is anecdotal evidence that some current consumer television receivers can “pull-in” the frequency offset ATSC 3.0 signal, NAB believes that such pull-in is not required by the ATSC 3.0 standard nor tested by consumer electronics manufacturers, and cautions that there are no guarantees that all television receivers will perform satisfactorily when an offset FM6 carrier is present. NAB again observes that NextGen TV is at an early stage of deployment and future reception problems created by FM6 operation must be resolved in favor of protecting the television service.

FM6 stations typically operate as separate television and FM stations with different programming and different audiences. That is, viewers of the TV6 digital low-power television programming may not be simultaneously listening to the FM6 analog audio. It is therefore important that the TV6 and FM6 operations comply independently with the Commission’s rules concerning the Emergency Alert System (EAS). FM6 stations should also comply with

¹⁹ $C = B \log_2 \left(1 + \frac{S}{N} \right)$, where C is the channel capacity in bits per second, B is the bandwidth in hertz and S/N is the power of the signal relative to the background noise at the receiver (signal to noise ratio).

²⁰ PCPC Reply Comments, Perry Priestly Study at 49.

²¹ Fifth NPRM at ¶¶ 14-15.

other rules applicable to both services, such as maintaining a public inspection file, but it seems reasonable that such requirements need not be duplicated for both services. In the case of the public file, for example, a single file can contain the required information for both the TV6 and the FM6 operations.

NAB believes that the requirement to transmit FM6 at 87.75 MHz is unnecessary and is linked to the now-obsolete NTSC television transmission system.²² Instead, NAB proposes requiring the 13 FM6 stations to operate on 87.7 MHz in order to give licensees the opportunity to improve analog FM6 reception while maintaining ATSC-3.0 compatibility. This small 50 kHz shift in frequency away from the FM band would presumably reduce the potential for interference to FM stations operating in the reserved band while improving compatibility and fidelity for FM receivers that can tune only in 200 kHz steps. Indeed, NAB notes that many or most FM6 operations apparently operate at 87.7 MHz and that the technical analysis done in support of FM6 operation in conjunction with ATSC 3.0 involved testing at 87.7 MHz.²³

V. THE SUBSTANTIVE RECORD REGARDING PROTECTION BY FM STATIONS OF TV6 STATIONS IS UNCHANGED AND NO CHANGE IN THE DISTANCE SEPARATION RULES IS JUSTIFIED AT THIS TIME

The present requirements for FM stations to protect channel 6 television stations were required because NTSC (analog television) receivers seeking to receive TV6 stations would sometimes “lock-on” to stronger FM stations in the lower frequency portion of the FM band. Because NTSC audio was also FM, the television receiver was essentially fooled into substituting the FM radio station for the TV6 audio. Now that essentially all television stations have shut-down NTSC operation, NAB believes it is appropriate to consider what protection

²² *Id.* at ¶24

²³ PCPC Reply Comments, Perry Priestly Study at 49.

requirements, if any, would be necessary between digital television operations on channel 6 (both DTV and NextGen TV) and FM stations. This consideration should also include FM6 stations operating on 87.7 MHz. While the 2007 and 2008 studies submitted by NPR suggest that DTV receivers are better able to reject interference from nearby FM stations than older analog NTSC television receivers,²⁴ the reported improvement is inconsistent across the universe of 2007-vintage consumer receivers tested and is insufficient to justify the complete elimination of the protection requirements. For example, the 2008 NPR Labs report calculated reductions in interference area of as little as 55%,²⁵ which could still potentially result in interference in 45% of a TV6 station's service area for the assumed conditions. Wiping out almost half a television station's service area is clearly not in the public interest, so some requirements are still needed for protection of DTV stations.

The widespread availability of consumer NextGen TV receivers and the transition to ATSC 3.0 already underway also requires that a representative sample of NextGen TV receivers be evaluated to determine protection requirements for those television receivers. The record of this proceeding presently includes no interference testing involving NextGen TV receivers and such test data are needed before any changes to the existing TV6 protection requirements can be made.

NAB believes that FM6 operations on 87.7 MHz are an interference threat to FM stations on at least 88.1 and 88.3 MHz and vice-versa. Protection requirements are needed to protect both stations in the FM band and FM6 stations on 87.7 MHz. As a starting point,

²⁴ NPR Labs, *Interference Rejection Thresholds of Consumer Digital Television Receivers on Channel 6 with FM Broadcast Signals* (Dec. 17, 2007); NPR Labs, *Comparison of FM Broadcast Signal Interference Areas with Current Digital Television Receiver on Channel 6 to Analog TV Receivers Assumed in 47 CFR 73.525, September 5, 2008* (NPR Labs 2008 Report).

²⁵ NPR Labs 2008 report at 8 (Table 1).

NAB believes that the second- and third-adjacent channel protection requirements contained in Section 73.509 of the rules may be appropriate with respect to 87.7 MHz FM6 stations and FM stations operating on Channels 201 and 202 (88.1 and 88.3 MHz, respectively).

VI. CONCLUSION

For the reasons stated above, NAB respectfully requests that Commission modify its policies related to the use of TV Channel 6 as discussed above.

Respectfully submitted,

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