July 3, 2017

RE: Proceeding 17-105

TO: Chairman Ajit Pai
Commissioner Mignon Clyburn
Commissioner Michael O'Rielly

Modernization: 'FM radio on Channel 6' Proposal

"AM radio is not now, and is not likely to be in the near future, on an equal competitive level with FM radio – AM continues to be in distress," said National Association of Black Owned Broadcasters president, Jim Winston, in an April 7, 2017 letter to FCC Chairman Ajit Pai. Although Mr. Winston's letter was addressing the topic of whether or not to remove the radio market 'sub-caps', his observation about the future viability of AM radio fits perfectly with the proposal that I submit for your consideration, below.

This modernization proposal is regarding moving all U.S. AM radio stations to an expanded FM band, using the bandwidth that was occupied by analog television Channel 6, from 82.1 MHz to 87.9 MHz. My proposal, for the purpose of maximum efficiency, also includes moving all current low-power FM stations, FM translators, and some non-commercial FM stations to the Channel 6 bandwidth.

The Media Bureau has recently completed the Television Incentive Auction, to be followed by the re-allocation of hundreds of television channels, referred to as repacking. A few television channels are being reassigned to Channel 6. However, I would contend that it is considerably inefficient to assign less than 1% of U.S. television stations to the Channel 6 bandwidth, when 100% of thousands of AM stations and hundreds of FM stations and FM secondary services can be moved there, instead.

Additionally, the overwhelming majority of broadcast television viewers now receive programming through cable and satellite services, and not over-the-air (OTA), so there is no compelling reason, to them, that any television stations have to be allocated to the Channel 6 bandwidth. And, for the relatively few Americans who do watch OTA broadcast television, most of them are not even aware that, in most instances, the channel number they see on their TV set is now 'virtual', and not the actual one.

Consequently, if the Media Bureau wants to move some 'repacked' television stations to the Low VHF band, it should use the Channel 5 bandwidth, instead, since the Channel 6 bandwidth is contiguous to the current FM radio band. My ideas would certainly involve a major reorganization of the AM and FM broadcast radio services and bands, but I think <u>now</u> is the time, before the television station 'repacking' goes too far and becomes irreversible, to make the radio and television broadcasting policy reforms, bandwidth reorganizations, and modernization changes that will effectively serve the American public for many more decades to come.

The AM band, I believe, is irreversibly damaged by electromagnetic interference from overhead electric power lines and literally billions of electronic and electric devices in our homes, offices and other locations, which, this late in the game, would be virtually impossible for the FCC or any government agency to practically mitigate or reverse.

Other countries around the world, and particularly including our border neighbors, Mexico and Canada, are transitioning their AM broadcast stations to other technologies; namely, DAB+, DRM and/or FM. Under the guiding principles of simplicity, consumer familiarity, and avoiding 'reinventing the wheel', I strongly suggested that the FCC choose the 'FM expanded band' option for moving our AM broadcast stations.

This 'modernization' petition would impact the following sections of **47 CFR Part 73**:

- **47 CFR 73.201 - Numerical designation of FM broadcast channels.** This section would be changed to add FM Channels 171 – 200, from 82.1 MHz – 87.9 MHz.
- **47 CFR 73.202 - Table of Allotments.** This section would be changed to include new full-power FM allotments, including Channels 171 – 200 in the expanded FM band, along with new or changed allotments in the existing FM band.
- **47 CFR 73.207 - Minimum distance separation between stations.** This section would be changed to allow for two-channel separation for all FM Channels in the expanded FM band, including Channels 171 – 200, since all services shall be digital-only.
- **47 CFR 73.210 - Station classes.** This section would be changed to add the '-D' (see below) Class designations to the full-power channels in the expanded FM band, including Channels 171 – 180 and Channels 195 – 200.
- **47 CFR 73.603 - Numerical designation of television channels.** This section would be changed to reflect the deletion of the Channel 6 designation and bandwidth for television service.
- **47 CFR 73.606 - Table of allotments.** This section would be changed to reflect that no analog television service shall be allotted to the Channel 6 bandwidth.
- **47 CFR 73.622 - Digital television table of allotments.** This section would be changed to reflect that no digital television service shall be allotted to the Channel 6 bandwidth.
- **47 CFR 73.1650 - International agreements.** This section would be updated to reflect that Canada and Mexico shall not use the Channel 6 bandwidth for analog or digital television service, or any other service, that would interfere with U.S. use of the Channel 6 bandwidth for the expanded FM band.

While I am a part of the radio broadcasting industry, I am neither a broadcasting engineer nor an attorney, so the list, above, of affected Part 73 sections may be incomplete. Media Bureau staff may deem that other Part 73 sections would also need to be changed or revised, as relates to 're-purposing' the Channel 6 bandwidth to FM radio broadcasting.

Finally, attached, you will find a Table that details how I would organize the expanded FM radio band. Following are the reasons why I would arrange the expanded FM radio band in the ways that you see in the Table:

1. **Non-commercial, full-power FM stations, Channels 195 - 200, 86.9 - 87.9 MHz.**

   These Channels would be designated only for non-commercial, full-power FM stations, because of their contiguous position next to the existing 'Reserved' portion of the FM band, which is presently used only by 'NCE' stations. Placement of non-commercial, full-power stations on these particular expanded-band Channels achieves the important criterion of familiarity to Americans who listen to current NCE stations on the FM band.

   Additionally, and importantly, I would propose that all NCE stations currently operating in the 'Non-reserved' portion of the FM band, on Channels 221 – 300 (92.1 – 107.9 MHz), be required to move to either the expanded FM band or the current portion of the 'Reserved' FM band, on Channels 195 - 220. The NCE stations presently operating on Channels 221 – 300 would be given first priority to move to Channels 195 - 220, at the same FM B or C Class, in order to remove them as quickly as possible from Channels 221 through 300. Finally, Channels 221 – 300 would then be designated for 'Commercial'-only use. The Channel 221 – 300 frequencies opened up by the compelled move of NCE stations would be available for acquisition by commercial operators in a future FM Auction. Significant demand still remains, in the open market, for full-power, commercial FM stations, so I have no doubt that the FCC would find success in allocating the newly available frequencies, in the Channel 221 – 300 bandwidth, through the auction process.

2. **Low-Power FM stations, Channels 187 - 194, 85.3 - 86.7 MHz.**

   Channels 187 - 194 would be designated only for low-power FM (LPFM) stations, again, because of their contiguous position next to the expanded, 'Reserved' non-commercial FM band on Channels 195 - 200. Placement of LPFM stations on Channels 187 - 194 is a logical arrangement, since LPFMs are also required to operate on a non-commercial basis. Listeners who choose to consume programming offered by non-commercial broadcasters would be able to tune back and forth within a closely laid-out range of low or full-power frequencies, on Channels 187 - 220.

   For the same reasons I indicated in Item 1, above, LPFMs currently operating on Channels 221 – 300 would be required to move to Channels 187 - 194. As well, incumbent LPFM stations would be given first priority to move to Channels 187 - 194, before new LPFM licenses are granted. If minimum channel separation exists, the Channel 221 – 300 frequencies that are opened up by the compelled

move of LPFM stations to the expanded FM band would be available for acquisition by commercial operators in a future FM Auction.

And last, in a proposal that I believe would make current and prospective LPFM license holders very happy, all LPFM stations would operate at 250 watts, with two-channel/400 KHz separation, up from the current power limit of 100 watts. I think that LPFM proponents have made a compelling case that low-power FM stations should be allowed to operate at the same power level and specifications as the other secondary FM service, FM translators. While FM translators and LPFM stations were created for different policy reasons, I have not yet heard, from a technical or engineering standpoint, why LPFMs should be limited to 100 watts, as long as minimum spacing rules are formulated to match those of FM translators. This reasoning would become even truer, as LPFM stations would be required to operate only in the newly-designated expanded FM bandwidth, in the Channels 187 - 194 range, where there would be no interference to full-power FM stations (except, potentially, on LPFM Channel 194, which would be first-adjacent to a full-power NCE FM that may be operating on Channel 195. In such a case, no LPFM station, as a secondary service, would be allocated to Channel 194, if a full-power station is operating on Channel 195.).

3. **FM translators, Channels 181 - 186, 84.1 - 85.1 MHz.**

Channels 181 - 186 would be designated only for FM translators. Some current FM translators rebroadcast non-commercial programming from full-power AM and FM stations, while other FM translators broadcast commercial programming from AM and FM stations, as well as from FM HD sub-channels. As detailed below, in Item 4, Channels 171 - 180 would be designated for commercial FM stations. Hence, placement of FM translators on Channels 181 - 186, whether the translators carry commercial or non-commercial programming, would be the best logistical arrangement.

Again, for the same reasons I indicated in Items 1 and 2, above, FM translators currently operating on Channels 221 – 300 would be required to move to Channels 181 - 186. Incumbent FM translators would be given first priority to move to Channels 181 - 186, before new FM translators are granted. Similarly, if minimum channel separation exists, the Channel 221 – 300 frequencies that are opened up by the compelled move of FM translators to the expanded FM band would be available for acquisition by commercial operators in a future FM Auction.

4. **Commercial, full-power FM stations, Channels 171 - 180, 82.1 - 83.9 MHz.**

Channels 171 - 180 would be designated only for commercial, full-power FM stations. The commercial stations broadcasting in this portion of the expanded FM band, in order to improve the technical service offered to listeners, would at least operate as either a Class B1 or C3, depending on the region in which the

station is located, at a digital power that is equivalent to a minimum effective radiated power of 25 kilowatts, analog. In other words, Class A (or C4, if such a service is adopted) FM stations would be prohibited on Channels 171 – 180 (and the full-power, non-commercial FM stations on expanded Channels 195 – 200, as well). Class B, C2, C1, C0 and C stations would also be authorized on Channels 171 - 180, depending on the region in which the station is located.

Incumbent operators of commercial FM Class A (or C4) stations, operating on Channels 221 – 300, would be given first priority to move to Channels 171 – 180, before new stations are granted, at Class B1 or C3. When the incumbent operator begins broadcasting in the expanded band, the operator would be required to surrender the license of the incumbent Class A (or C4) station, before the end of a 'date certain' transition period. A move by incumbent Class A stations to the expanded band would be optional, but such a move would fall within a limited window period, as detailed by the Media Bureau. Once this window deadline for Class A (or C4) moves has passed, all remaining frequencies in the Channels 171 - 180 bandwidth would be available for acquisition by commercial operators in a future FM Auction.

5. New FM classes for digital FM stations.

With the superior technical efficiency and propagation characteristics of digital signals, minimum channel separation can be reduced, allowing for more channels or stations to be allocated in a defined bandwidth area. Minimum separation for full-power FM stations, with all-digital signals, can go from the current four channels apart down to two, at least doubling the number of new channels that can be created.

As we know from observing the transition of U.S. television stations, digital broadcasting stations operate at much lower wattages, while providing full service to the same geographic service area that was covered at much higher power as analog stations. Digital FM stations will also be able to operate at considerably lower power than the present analog FM stations. For the purpose of assigning an FM Class to the different FM services in the expanded band; and for assigning a new class to the full-power FM stations and secondary FM services that move to the all-digital FM expanded band, from analog Channels 201 – 300, I would propose that the letter 'D', for 'digital', be added to the current analog FM Class nomenclature.

For example, if a current Class C2 FM, operating in the Channel 201 – 300 bandwidth, moves to the expanded band as a mandated digital-only station, the new FM Class for that station would be designated as Class 'C2-D'. LPFM stations would be designated as 'FL-D'. FM translators would be designated as 'FX-D'. And, FM boosters would be designated as 'FB#-D'.

These proposed '-D' designations would be used temporarily, until a 'date certain', when all FM stations and services, including those operating on Channels 201 – 300, have transitioned to full digital status.

6. **FM class assignment for relocated AM stations.**

AM stations moved to the expanded FM band would operate at the following FM classes:

- AM Class A stations would be assigned FM Class B(-D) or C(-D), depending on the region in which the station is located.
- AM Class B stations would be assigned FM Class B(-D) or C1(-D), depending on the region in which the station is located.
- AM Class C stations would be assigned FM Class B1(-D) or C3(-D), depending on the region in which the station is located.
- AM Class D stations would be assigned FM Class B(-D) or C1(-D), depending on the region in which the station is located.

The new FM classes proposed, above, would be a comparable reflection of the hierarchical and operational class status of the respective AM stations. After a defined transition period, the former AM Class B and D stations would be permitted to upgrade to a higher FM class, on a 'first come, first served' basis. AM Class C stations would be capped at FM Class B1(-D) or C3(-D), maintaining the 'Local' service status of these stations.

7. **FM broadcast professional and consumer electronic equipment manufacturer mandate.**

The FCC shall mandate the following requirements for the manufacture and distribution of all professional and consumer FM broadcast equipment in the United States market:

- Professional and consumer FM broadcasting equipment shall only use the current 'In-Band, On-Channel' (IBOC) digital standard, also known as 'HD Radio', on the FM expanded band. Additionally, and importantly, for the purpose of advancing the transition of the FM service to fully digital broadcasting, station operators would be required to use digital-only signals in the FM expanded band, Channels 171 - 200.
- Beginning on a date to be determined by the FCC, all manufacturers producing and distributing professional and consumer FM broadcasting equipment in and for the U.S. market shall be required to conform to the standards mandated by the FCC, in the expanded FM bandwidth, by including FM Channels 171 - 200 in all new equipment, and with FM Channels 171 - 200 operating in digital-only IBOC.

8. Channels 221 – 300 efficiency reorganization.

Once the removal of all full-power, non-commercial FM stations, low-power FM stations, and FM translators is complete in the Channel 221 – 300 FM bandwidth, an incumbent FM station may petition the Media Bureau to compel another existing FM station to move, up to three channels, in order to accommodate a channel move without the need for the petitioning station operator to 'show cause', as long as the petitioning station agrees, in writing, to pay all reasonable costs incurred by the station being forced to move. <u>However</u>, the petitioning station must demonstrate to the Media Bureau that such a compelled move would increase the efficient distribution of FM channels in the subject market or broadcast area, in a way that will better serve listeners.

9. Conclusion.

I believe I have presented a comprehensive and thoughtful solution for ending broadcasting on the damaged AM band, by reassigning the AM stations to an expanded FM band. I assert that the AM band is permanently degraded by the electromagnetic 'noise' levels from so many sources and devices, and to such an extent, the impact to AM stations cannot be practically reversed.

Following on my modernization proposal contained herein, I would respectfully request, if needed, that a further, expedited Notice of Inquiry (NOI) be undertaken by the FCC to solicit the comments and ideas of other interested parties about terminating AM broadcasting in the United States and moving all AM stations to an expanded FM band, using the Channel 6 bandwidth. As I laid out, above, in the name of efficiency and utility, I also suggest that full-power, non-commercial FM stations, low-power FM stations, and FM translators be moved off of FM Channels 221 – 300 and to the new, expanded FM band.

Although an expense will be incurred by AM station owners to relocate their signals to the expanded (or existing) FM band, they should be pleased and excited in knowing that, with a digital FM signal, they can go from a single AM signal to multiple, 'HD' channels on each new FM signal. An already successful AM station operator will be able to scale up the additional HD channels into a business model that will allow the operator to recover its costs in a reasonably short timeframe.

Yes, this will be a complicated and disruptive process. For one, the FCC would require all television stations now operating on Channel 6 to move to different channels, including the relatively few remaining full-power TV

stations, such as ***WPVI***, on Channel 6, in Philadelphia, Pennsylvania. Moving the television stations currently broadcasting on Channel 6 also will have to take into consideration the effect of the TV channel 're-packing' process, with the recent completion of the television Incentive Auction. That is why I would propose that the FCC structure the TV channel repacking process to exclude Channel 6 for new video broadcasting service. Again, from a policy standpoint, the Chairman and Commissioners will have to decide whether the greater public interest is served by moving and improving the thousands of AM (and many current FM stations and secondary services) stations that hundreds of millions of Americans listen to, on a daily basis, to an expanded FM band; or whether the far fewer number of television stations still operating on Channel 6, but mostly viewed by a vast majority of Americans on cable and satellite distribution systems, and not over-the-air, will be given comparatively disproportionate weight and favor. Of further consideration, digital television stations broadcasting on the 'Low VHF' channels, 2 through 6, also receive electromagnetic interference in a similar way that AM radio stations do. That 'Low VHF' signal interference would be rendered moot if that bandwidth was repurposed for FM radio use.

Finally, I understand that the U.S. Government would have to negotiate treaty agreements with our border neighbors, Mexico and Canada, to reassign Mexican and Canadian television stations operating on Channel 6 to other channels. Our Federal government has successfully reached broadcasting agreements with these two nations before, numerous times, so a 'Channel 6 Bandwidth Agreement' with the two countries should not be a particular problem.

No one, more than I, will personally regret seeing the end of AM broadcasting. As a child, I grew up avidly listening to AM radio. But, I believe there are times when the need for progress and a new way of doing certain things is called for. The degradation of the AM band is so substantial, though, that the FCC, by necessity, is presently involved in several 'revitalization' efforts to try to save medium-wave broadcasting. However, I think that U.S. broadcasters and radio listeners and consumers, from public policy and social standpoints, would welcome a more meaningful, long-term solution to the problems that are plaguing AM stations, by shutting them down and migrating AM stations to FM. As I pointed out, above, many countries, including Canada and Mexico, are already doing the AM-to-FM change. Ultimately, after an appropriate period of discussion and consideration of the matter, it is my hope that the FCC would eventually implement a Rulemaking and final Report and Order to bring about the changes that I propose.

Thank you.

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Attachment: Table: Expanded FM Band Proposed Allocations