

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)	
)	
Amendment of Parts 73 and 74 of the)	MB Docket No. 03-185
Commission's Rules to Establish Rules for)	
Digital Low Power Television and Television)	
Translator Stations)	
)	
Expanding the Economic and Innovation)	GN Docket No. 12-268
Opportunities of Spectrum Through Incentive)	
Auctions)	
)	
Amendment of Part 15 of the Commission's)	ET Docket No. 14-175
Rules to Eliminate the Analog Tuner)	
Requirement)	

To: The Commission

REPLY COMMENTS OF
NATIONAL PUBLIC RADIO, INC.

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Summary

As evidenced by the vast majority of comments filed in response to the *Third Notice of Proposed Rulemaking*, the Commission's efforts to facilitate a successful digital television ("DTV") transition for the remaining analog television translator and low power television ("LPTV") stations should be directed to the preservation of the important *television* services these stations provide. Yet, the *Third Notice* devotes considerable attention to a proposal that is not germane to the DTV proceeding, is premature, and is contrary to communications law and policy, including numerous Commission and Communications Act requirements.

What is fundamentally not at issue is the quality of the analog FM radio services some analog LPTV stations may currently provide or the audiences they serve. While the Commission should develop a factual basis on which to assess the LPTV service generally, including LPTV analog FM radio services offered via the 82-88 MHz spectrum, one may assume that some listeners value these LPTV analog FM services. That, however, does not change the fact that using a 6 MHz channel to transmit a 200 kHz service is a patently inefficient use of radio-frequency spectrum and doing so contradicts and potentially obstructs the Commission's efforts to promote a diversification of broadcast ownership since many more FM radio stations could use the same 6 MHz channel to offer a wider array of services. Nor would the proposed LPTV DTV analog FM radio service constitute a permissible "ancillary or supplementary service" under the Communications Act or the Commission's rules.

Based on the technical record established in this proceeding, the LPTV DTV analog FM radio station would likely produce an aural signal incapable of quality reception by analog FM receivers and/or DTV-host interference to a significant percentage of DTV receivers. The contrary technical claims of the proponents of the service are presented without any supporting

data or lack credibility and, at most, underscore the need for additional testing and development to resolve significant technical issues.

If the Commission decides to pursue the proposal, moreover, it is required under the Communications Act to apply the rules governing other radio broadcast services to an LPTV DTV analog FM radio service. Included among the applicable rules must be the technical rules governing noncommercial educational ("NCE") FM stations operating on the NCE-reserved spectrum, which is immediately adjacent to the 82-88 MHz spectrum. Otherwise, there would be no way of predicting and avoiding interference resulting from the LPTV DTV analog FM services to adjacent NCE FM stations.

In sum, if the Commission decides to pursue the proposed LPTV DTV analog FM radio service notwithstanding the substantial barriers under the Communications Act and the Commission's rules, much work would need to be done. NPR therefore urges the Commission to take up the matter, if at all, in a separate proceeding specifically directed to the use of the 82-88 MHz spectrum following the television broadcast auction and repacking process.

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To: The Commission

**REPLY COMMENTS OF
NATIONAL PUBLIC RADIO, INC.**

Introduction

Pursuant to Section 1.415 of the Commission's Rules, 47 C.F.R. § 1.415, National Public Radio, Inc. ("NPR") hereby submits its Reply Comments in response to the comments on the Commission's *Third Notice of Proposed Rulemaking* in the above-captioned proceeding.¹

In its initial comments, NPR supported the measures proposed in the *Third Notice* aimed at facilitating the digital television ("DTV") transition for low power television ("LPTV") and television translator stations while minimizing the disruption that might otherwise occur because

¹ *Amendment of Parts 73 and 74 of the Commission's Rules to Establish Rules for Digital Low Power Television, Television Translator, and Television Booster Stations, Third Notice of Proposed Rulemaking*, MB Docket No. 03-185, 29 FCC Rcd. 12536 (2014) ("*Third Notice*"). Unless otherwise indicated, all citations to comments are to comments filed in this proceeding in response to the *Third Notice*.

of the impending television incentive auction and repacking process.² While most LPTV and TV translator stations have already completed the DTV conversion,³ the spectrum auction and channel repacking process scheduled to take place after the current September 1, 2015 deadline for the remaining analog LPTV and TV translator stations to convert could be unduly burdensome for those stations.

NPR opposed the proposal to authorize LPTV stations operating on the 82-88 MHz (Channel 6) spectrum to offer analog FM radio services, however, for numerous reasons.⁴ The *Third Notice* doesn't explain the purpose of the proposal but, in any event, it is not germane to the purpose of this proceeding or of the DTV transition generally. The matter is premature and potentially unnecessary until more is known about the future availability of the 82-88 MHz spectrum. The same cannot be said for LPTV and television translator stations offering television services, for which 6 MHz television channels will and should be made available following the television auction and repacking process. Finally, the proposal raises substantial issues as a matter of law and longstanding communications policy. Accordingly, NPR urged the Commission to address the use of the 82-88 MHz spectrum following the auction and repacking process in a separate proceeding directed to the issues raised by the Commission's LPTV analog FM radio proposal and with consideration for other potential uses of the spectrum, including use by FM broadcast stations constructed, operated, and regulated as such.

Among the initial comments filed in response to the *Third Notice*, the comments filed by the National Translator Association ("NTA") put the matter in proper context. NTA expresses

² NPR Comments at 2-3.

³ *Third Notice*, 29 FCC Rcd. at 12539.

⁴ NPR Comments at 3-13.

no opinion on the merits of the proposal, but asks how the Commission can devote so much attention to protecting a handful of LPTV stations using a 6 MHz allotment to deliver a 200 kHz FM radio service, without any foundational analysis of what audience is being served or what alternatives might be considered.⁵ NTA instead urges the Commission to focus its attention and resources on preserving the *television* service provided by some 6,000 TV translator stations, primarily to rural areas of the country.⁶ NPR agrees.

Not surprisingly, a handful of LPTV stations currently using their 6 MHz allotments to offer a 200 kHz analog FM radio service also filed comments supporting the Commission's proposal. The following responds to those comments.

1. The use of a 6 MHz channel allocated for television to provide a 200 kHz, technically compromised analog FM radio service for FM radio reception is clearly an inefficient use of spectrum. Several LPTV Channel 6 licensees currently operating analog FM radio stations made the startling claim that they "are making optimal use of the spectrum to the overall betterment of Section 307(b) of the Communications Act."⁷ Even if such claim were not belied by simple physics, the Commission long ago recognized and has subsequently reaffirmed that spectrum efficiency precludes allowing spectrum allocated for television to be used to provide a

⁵ National Translator Association Comments at 12.

⁶ *Id.* at 12. *See also* Comments of the Public Broadcasting Service, Corporation for Public Broadcasting, and Association of Public Television Stations at 5-7 (urging the Commission to ensure the preservation of NCE television translator service, including by giving such stations priority over other translator or LPTV applications).

⁷ *See* Comments of Hispanic Family Christian Network, Inc. at 2. Many virtually identical comments were also filed by the same law firm making the same claim. *Compare* Comments of Daniel Gomez and Comments of Elva and Moises Gomez. *See also* Comments of George S. Flinn, Jr. at 4 ("Spectrum efficiency is critical in pushing technology and creativity forward.") ["Flinn Comments"].

broadcast radio service.⁸ Indeed, the Commission's first commercial television rules were based on this understanding.⁹ As the Commission subsequently explained:

It is the Commission's opinion that the use of a television station authorized to operate on a 6-mega-cycle channel merely as an aural or quasi-television broadcast station would not serve the public interest. A license to operate a television station employing such a large proportion of spectrum space carries with it the responsibility of functioning as a television broadcast station. . . . The Commission believes that the utilization of television facilities merely for purposes of duplicating the sound portion of aural broadcasts of AM or FM stations . . . would be an uneconomical use of radio frequencies.¹⁰

Of course, unused radio-frequency spectrum has only become more scarce in the past 65 years. The Commission has further observed that a single 6 MHz television channel allotment "is the equivalent of 600 AM or 30 FM channels."¹¹ Indeed, 6 MHz constitutes 50 percent more spectrum than all of the spectrum reserved for noncommercial educational ("NCE") FM radio use in a given area.¹² Whatever may be said about an LPTV DTV station being used to provide an analog FM radio service for reception by FM radios, it is not an efficient use of spectrum.¹³

⁸ See *In the Matter of Operation of Visual and Aural Transmitters of TV Stations, Report and Order*, 82 F.C.C.2d 193, 195-96 (1980) ("1980 Report and Order").

⁹ See *Amendment of Section 3.661(b) of the Commission's Rules and Regulations Relating to the Separate Operation of Aural and Visual Transmitters of Television Stations, Report and Order*, 43 F.C.C. 372, 372 (1950) ("1950 Report and Order").

¹⁰ *Id.*, 43 F.C.C. at 374.

¹¹ *1980 Report and Order*, 82 F.C.C.2d at 196 n.9.

¹² The Commission's rules reserve Channels 200-220, or approximately 4 MHz of spectrum, for noncommercial educational FM radio use. 47 C.F.R. § 73.501(a).

¹³ The Communications Act requires the Commission to manage the radio-frequency spectrum in the public interest, doing so to make effective and efficient use of the spectrum. 47 U.S.C. §§ 151, 303(g).

2. Current Commission rules do not authorize an analog LPTV stations to operate as an FM radio station. Certain LPTV Channel 6 interests also make the equally unfounded claim that the Commission's rules currently authorize analog LPTV stations to operate as FM radio stations.¹⁴ To the contrary, such operations were never intended by the Commission as evidenced by its recognition of the spectrum inefficiency of such operations. While the Commission has authorized *all* television stations to operate separate visual and aural transmitters, at first during overnight hours and subsequently without a time-of-day restriction, the clear intention was to provide flexibility for television stations to serve television *viewers*, not FM radio listeners.

For instance, there are some communities where certain news or special interest reports, e.g., farm crops index reports, may be of significant public benefit at certain times of the regular broadcast day. Rather than broadcasting such information with an on-air announcer, stations could elect to transmit these reports more cost effectively via a video text bulletin board-like service. In general, we believe that competitive pressures from competing stations and from *viewers* will create incentives for broadcasters to decide whether to transmit regular integrated sound and video signal programming or to transmit non-associated audio and video informational services, depending upon the interest and desires of their *viewers*.¹⁵

These rulemaking decisions, which govern the operation of broadcast television stations generally, were simply never intended to authorize LPTV Channel 6 stations to operate as FM radio stations.

¹⁴ E.g., Comments of the LPTV Spectrum Rights Coalition at 13 ("The service they provide is allowed within the LPTV rules") ["LPTV Spectrum Rights Comments"].

¹⁵ *In the Matter of Review of Technical and Operational Regulations of Part 73, Subpart E, Television Broadcast Stations, Notice of Proposed Rulemaking*, 3 FCC Rcd 2480, 2480 (1988) (*emphasis added*).

3. LPTV analog FM radio service is not a permissible ancillary or supplementary service under the Communications Act and the Commission's rules. As NPR's comments addressed in some detail, an LPTV DTV station offering an analog FM radio service for FM radio reception is incompatible with the Communications Act and Commission rules governing ancillary or supplementary services both in letter and in spirit.¹⁶ To elaborate for the avoidance of doubt, there are several statutory grounds on which the proposed LPTV DTV analog FM radio service would violate the Act.

First, under Section 336(a)(2) of the Act, the Commission may permit a licensee to offer ancillary or supplementary services under the Act only "as may be consistent with the public interest, convenience, and necessity."¹⁷ As demonstrated above and in NPR's comments, the use of a 6 MHz DTV channel by a single LPTV station to offer a 200 kHz analog FM radio service is a significant misuse of scarce spectrum, especially if the LPTV station is limited to 0.5 kW maximum effective radiated power ("ERP").¹⁸ The same spectrum could be used much more efficiently by many more, higher powered FM radio stations directly.¹⁹

Second, under Section 336(b)(1) of the Act, in prescribing regulations to implement this statutory mandate, Congress commanded the Commission to "only permit [a television] licensee or permittee to offer ancillary or supplementary services if the use of a designated frequency for such services is consistent with the technology or method designated by the Commission for the

¹⁶ NPR Comments at 4-7.

¹⁷ 47 U.S.C. § 336(a)(2).

¹⁸ See Joint Comments of Island Broadcasting LLC and Richard D. Bogner at 3 ["Bogner/Island Comments"].

¹⁹ See NPR Comments at 5 & n. 15.

provision of advanced television services.”²⁰ This statutory provision, in turn, establishes two important conditions. First, and as the underlying legislative history explains, the purpose of permitting ancillary or supplementary services was to “promote[] more efficient spectrum use” and to “encourage[] innovation” through “a variety of *digitally transmitted* services.”²¹

According to the House Report accompanying the operative legislative language:

Within each 6 megahertz (mHz) assignment, a variety of *digitally transmitted services* can be offered by a broadcast licensee. The characteristics of a *digital transmission* permit it to be used for an intermixed flow of data. Given the dynamic nature of the data flow, these services probably cannot be separated or segmented. Therefore, these different *digital* services are “indivisible” within the 6 mHz assignment, and these services are provided along with the signal that the licensee broadcasts advanced television (ATV) programming.²²

Thus, as required by Congress and as previously recognized by the Commission itself, the “technology or method designated by the Commission for the provision of advanced television services” is limited to digitally transmitted services, thereby precluding the offering of an analog FM radio service as proposed.²³

²⁰ 47 U.S.C. § 336(b)(1).

²¹ House Report No. 204, 104th Cong., 1st Sess. at 116 (1995) (“House Report”) (*emphasis added*).

²² *Id.* (*emphasis added*). See also *In The Matter Of Advanced Television Systems And Their Impact Upon The Existing Television Broadcast Service, Fifth Report and Order*, 12 FCC Rcd. 12809, at 12823 (1997); NPR Comments at 5-6.

²³ See *Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service, Memorandum Opinion and Order on Reconsideration of the Fifth Report and Order*, 13 FCC Rcd. 6860, 6866 (1998) (“These [new NTSC] stations will also be afforded the flexibility to provide *digital* ancillary or supplementary services authorized by Section 73.624(c) of the Commission's Rules, consistent with the DTV standard.”) (*emphasis added*) [“*Fifth Reconsideration Report and Order*”].

Second, Section 682(d) of the Commission’s rules sets forth “the DTV standard,”²⁴ comprising particular standards documents developed by the Advanced Television Systems Committee.²⁵ None of these standards documents contemplate, let alone provide, a method for the transmission of analog FM radio services for FM radio reception using the 82-88 MHz.²⁶ Thus, in the case of LPTV DTV analog FM radio services and otherwise, where the service is neither digitally transmitted nor consistent with the DTV standard, it is not a permissible “ancillary or supplementary service” under the Act.²⁷

Arguments by LPTV Channel 6 interests to the contrary fail to address these governing statutory parameters. One LPTV Channel 6 commenter contends that a proposed LPTV DTV analog FM radio service is consistent with the technology or method designated by the Commission for the provision of advanced television services because the LPTV DTV station will continue to transmit a video signal.²⁸ But that assertion does not establish that the technology or method involved is consistent with the technology or method designated by the Commission for advanced television services as set forth in the Commission’s rules. If it did, then any technology or method could be utilized so long as it enabled some form of DTV visual

²⁴ *Id.*

²⁵ 47 C.F.R. § 73.682(d).

²⁶ *See, e.g., id. (citing ATSC A/53 Part 5:2010 “ATSC Digital Television Standard: Part 5 - AC-3 Audio System Characteristic,” (July 6, 2010)).*

²⁷ Indeed, the statutory definition of “advanced television services” means television services provided using *digital or other advanced technology.* 47 U.S.C. § 336(i)(1) (*emphasis added*). As the House Report explains, the DTV standard was intended to govern the flow of digitally transmitted data across the 6 MHz channel. House Report at 116.

²⁸ Comments of Venture Technologies Group at 5 [“VTG Comments”].

transmission.²⁹ But it does not meet the requirements of the Act because ancillary or supplementary services “are required to comply with the DTV transmission standard established by the Commission.”³⁰

Several LPTV Channel 6 commenters also argue by analogy to HD Radio,³¹ but such an analogy fails because HD Radio and a proposed LPTV DTV analog FM radio service are fundamentally different. The Commission approved HD Radio as a means of transitioning analog radio broadcast stations to hybrid analog/digital operation and, eventually, to an all-digital broadcast model.³² The HD Radio system permits the continued broadcast of a station’s primary analog service while enabling digitally transmitted ancillary or supplementary channels, all for reception by radio receivers capable of receiving both analog and digital radio services transmitted through the HD Radio system, with existing analog-only receivers capable of receiving the analog service. An LPTV DTV analog FM radio service, on the other hand, represents an attempt to maintain an unsanctioned analog service for reception by analog FM radio receivers in lieu of providing a DTV service for reception by DTV receivers. The service most obviously analogous to an LPTV DTV analog FM radio service would be full power FM

²⁹ However, the Commission cannot allow an LPTV DTV station to broadcast an ancillary or supplementary service that derogates the station’s DTV service, 47 U.S.C. § 336(b)(2), and NPR questions whether even the proposed LPTV DTV analog FM radio service violates that statutory proscription.

³⁰ *Fifth Reconsideration Report and Order*, 13 FCC Rcd. at 6867.

³¹ *E.g.* Comments of Educational Media Foundation at 4 (“Just as digital HD radio provides a complementary service to analog radio broadcasting, this analog service will provide a complement to the digital video service provided by the LPTV station operating on Channel 6.”) [“EMF Comments”].

³² *Digital Audio Broadcasting Systems And Their Impact On The Terrestrial Radio Broadcast Service, First Report and Order*, 17 FCC Rcd 19990, 20001 (2002).

radio broadcast stations because both broadcast origination services for reception by FM radio receivers and can operate at comparable power levels.

Even if an analogy to HD Radio were valid, the Commission cannot rewrite the Communications Act on that, or any other, basis. Assuming an LPTV DTV analog FM radio service will serve a minority or other underserved audience or provide a useful service otherwise, it does not constitute an “ancillary or supplementary service” for purposes of the Communications Act and the Commission’s rules unless it satisfies the statutory conditions imposed for such services under the Act. An analogy, especially a misplaced one, or a desire to offer what may be a meritorious service cannot supplant the statutory and Commission requirements for DTV ancillary or supplementary services.³³

4. The Communications Act requires the application of the Commission’s rules governing other radio broadcast services to LPTV DTV analog FM radio services. Under the Communications Act, the Commission is required to apply to any ancillary or supplementary service "such of the Commission’s regulations as are applicable to the offering of analogous services by any other person."³⁴ The Commission's rules implement this obligation,³⁵ and, as NPR noted in its initial comments, the Commission has previously applied it to other DTV services.³⁶

³³ Compare EMF Comments at 4 ("Merely because different or additional transmission equipment is necessary to provide that service is not different than the different or additional transmission equipment (including, in some cases, a separate antenna) used to transmit digital HD radio by radio stations that are otherwise operating an analog facility.")

³⁴ 47 U.S.C. § 336(b)(1). See also House Report at 116.

³⁵ 47 C.F.R. § 73.624(c).

³⁶ NPR Comments at 6-7 & n.26.

Some LPTV Channel 6 stations concede the applicability of the Commission's broadcast regulations to an LPTV DTV analog FM radio service,³⁷ others do so selectively,³⁸ while others oppose any such regulation.³⁹ The suggestion that the Commission has broad discretion to disregard regulations applicable to analogous services is contrary to the clear statutory mandate, a mandate the Commission has readily acknowledged.⁴⁰ That the service may cross Commission administrative jurisdictional lines may make the task more complicated,⁴¹ but it is not a basis for avoiding the statutorily mandated task altogether.

An attempt to limit the application of the FM broadcast rules to a small subset based on the rules applicable to HD Radio multicast channels is also misplaced. HD Radio multicast channels are not the relevant "analogous service," as explained above, but this commenter also misreads the Commission's *Second Report and Order* in the Digital Audio Broadcasting proceeding establishing the rules for such channels.⁴² Rather than substantially limiting the rules applicable to HD Radio digital multicast channels, the *Second Report and Order* considered how

³⁷ See EMF Comments at 4.

³⁸ See, e.g., VTG Comments at 6 (urging the Commission to take a practical view of the application of the Part 73 rules to an LPTV DTV analog FM radio service). See also Comments of Hispanic Family Christian Network, Inc. at 2-3.

³⁹ See, e.g., Comments of Signal Above, LLC at 8 ("Any rules, which should be under the auspices of the video division [sic], should be limited to technical parameters assuring there is no interference.") ["Signal Above Comments"].

⁴⁰ 47 U.S.C. 336(b)(1). See also *Fifth Reconsideration Report and Order*, 13 FCC Rcd. at 6869 ("We are also required to apply any regulations relevant to analogous services.")

⁴¹ See LPTV Spectrum Rights Comments at 13 ("The service they provide . . . should continue to be governed by the Video Division and not the Radio [sic] Division.")

⁴² VTG Comments at 7-8 (citing the *Digital Audio Broadcasting Systems and Their Impact on the Terrestrial Radio Broadcast Service, Second Report and Order*, 22 FCC Rcd 10344 (2007) ["*Second Report and Order*"].

to apply certain public interest obligations to multicast channels given the unique characteristics of HD Radio digital multicasting.⁴³ The rules cited by this commenter were simply the ones the Commission concluded warranted some additional consideration,⁴⁴ but the *Second Report and Order* clearly required the application of other statutory and Commission FM broadcast requirements.⁴⁵ In sum, even if HD Radio multicasting were an appropriate analogy to the LPTV DTV analog FM proposal, the *Second Report and Order* is entirely consistent with the Commission's statutory obligation to apply to the LPTV service the rules governing "the offering of analogous services by any other person."⁴⁶

If this commenter's reading of the *Second Report and Order* were correct, an HD Radio multicast channel, or an LPTV DTV analog FM radio service subject to similar regulatory treatment, could broadcast patently indecent and profane matter at any time of the day. Such a regime would be irrational given the Commission's ongoing enforcement of the statutory prohibition on such matters.⁴⁷ That would be especially true in this case because the LPTV DTV analog FM radio service would be receivable by many of the hundreds of millions of FM

⁴³ See *Second Report and Order*, 22 FCC Rcd. at 10368-69 ("In the *DAB FNPRM*, we sought comment on how to apply such [public interest] obligations to DAB.").

⁴⁴ *Id.*, 22 FCC Rcd. at 10368-70.

⁴⁵ *Id.*, 22 FCC Rcd. at 10371 ("Additionally, radio stations operating in a digital format must comply with all other public interest obligations applicable to radio broadcasters while operating in that mode. That is, a radio station providing digital audio programming service analogous to the analog audio service subject to regulation by the Commission must comply with such regulations that apply to that service, unless otherwise specified or clarified in this *Second Report and Order*.")

⁴⁶ 47 U.S.C. 336(b)(1).

⁴⁷ See 47 U.S.C. § 1464; 47 C.F.R. § 73.3999.

radio receivers in use today,⁴⁸ while the HD Radio multicast services are only received by the relatively small universe of HD Radio receivers currently in use.⁴⁹

It is also essential that the Commission conform the proposed new service, if authorized, to the technical rules governing the FM broadcasting service since the 82-88 MHz spectrum is immediately adjacent to the NCE FM reserved channels. Among other things, the Part 74 rules governing LPTV stations do not require such stations to protect FM radio services despite the difference in priority status, which the Commission's recognizes obligates LPTV stations to protect FM radio stations.⁵⁰ And, while the LPTV rules limit an LPTV's maximum peak effective radiated power ("ERP"), they do not limit the height above average terrain ("HAAT") of such stations.⁵¹ Without the latter limit, an LPTV DTV station desiring to offer an analog FM radio service could construct its transmitting antenna at a height that would cause harmful interference to adjacent NCE FM stations without the LPTV applicant, the Commission, or an adversely affected NCE FM station necessarily being aware. Indeed, without HAAT limits for

⁴⁸ Though not all FM radios are capable of receiving FM broadcast signals transmitted below 87.9 MHz, virtually every U.S. household possess FM radio equipment. See UNESCO Institute for Statistics, *The Media Landscape In 28 Countries: Results From A UIS Pilot Survey at 14* (2012), available at <http://www.uis.unesco.org/Communication/Documents/Media-statistics-pilot-survey-report.pdf#page=14>.

⁴⁹ Compared to the hundreds of millions of FM radio receivers currently in use, approximately 25 million HD Radio receivers have been sold since the Commission approved the use of the HD Radio system. iBiquity Digital Corporation, *Press Release: HD Radio™ Adoption By Consumers In 2014 Contributes To Nearly 25 Million Units In Use, Driving New Content Offerings From Broadcasters And High Satisfaction* available at http://ibiquity.com/press_room/news_releases/2015/1669.

⁵⁰ See *Third Notice*, 29 FCC Rcd. at 12555.

⁵¹ Compare 47 C.F.R. § 74.735 (specifying power, but not height, limitations for LPTV stations) with 47 C.F.R. § 73.211 (specifying power and antenna height requirements for FM radio stations).

LPTV stations, the Section 73.509 prohibited overlap rule is an essential “analogous service” rule to apply to any LPTV DTV analog FM radio service.⁵²

5. As demonstrated in testing conducted for this proceeding, combining DTV visual and analog FM radio transmissions in a single LPTV facility ultimately results in an aural signal incapable of quality reception by analog FM receivers and/or DTV-host interference to a significant percentage of DTV receivers. Because the primary service of LPTV stations offering analog FM radio services has been the analog FM radio service,⁵³ the Commission properly questioned whether the DTV service of such an LPTV station would suffer host interference as a result of the LPTV station seeking to transmit a signal capable of reception by FM radio receivers.⁵⁴ Such interference would undermine any basis for characterizing the LPTV station as having completed the DTV transition, and it would also violate the Communications Act.⁵⁵ An equally important question is whether the analog FM radio service offered by LPTV DTV stations would be so technically compromised that it cannot be justified on public interest and spectrum efficiency grounds.⁵⁶

Some LPTV Channel 6 interests simply ignored the issue of potential DTV-host interference from the proposed LPTV DTV analog FM radio service, even while claiming that

⁵² 47 C.F.R. § 73.509.

⁵³ See *Third Notice*, 29 FCC Rcd. at 12554 (“Currently, some analog LPTV stations licensed on channel 6 are operating with very limited visual programming and an audio signal that is programmed like a radio station.”)

⁵⁴ *Id.* 29 FCC Rcd. at 12555.

⁵⁵ Section 336(b)(2) of the Act forbids ancillary or supplementary services that derogate a DTV station's advanced television service. 47 U.S.C. § 336(b)(2).

⁵⁶ See NPR Comments at 8-9.

such operations would not interfere with other full or low power operations.⁵⁷ Others offered little more than categorical claims that an LPTV DTV station could offer robust visual and audio transmissions in a technically sound fashion.⁵⁸ Finally, attempts to present a technical basis for the proposed operation of LPTV DTV analog FM radio services failed to provide relevant test data for analysis, unlike the Gumm/Rhodes study,⁵⁹ and raised additional questions.⁶⁰

As NPR pointed out in its initial comments,⁶¹ the Gumm/Rhodes laboratory testing showed that as many as 25 percent of the DTV receivers tested (and the universe of DTV receivers in use they represent) would suffer harmful interference caused by the LPTV DTV's analog FM radio service. Even so, the Gumm/Rhodes study did not account for real world conditions that are likely to result in even greater DTV-host interference and an analog FM radio signal that would be of even lower quality than what the study estimated.⁶² The suggestion by some commenters that interference to as many as one quarter of DTV receivers is not important

⁵⁷ See Flinn Comments at 4.

⁵⁸ See, e.g., Signal Above Comments at 5 ("The proposal is clearly in the public interest in that not only will Channel 6 licensees be able to provide digital television programming but radio programming as well.")

⁵⁹ Comments of Linley Gumm and Charles Rhodes to Section E, "Operation of Analog Radio Services by Digital LPTV Stations as Ancillary or Supplementary Services (filed Nov. 12, 2014) ["Gumm/Rhodes Comments"].

⁶⁰ See Bogner/Island Joint Comments at 2-3; VTG Comments at 2-3.

⁶¹ See NPR Comments at 8-9.

⁶² For instance, the Gumm/Rhodes study assumed a 25 kHz aural modulation peak deviation because that is the standard under the Commission's rules for analog television, but FM radio services, and many analog LPTV FM radio services, operate with a much higher modulation to improve FM radio reception. NPR Comments at 8. The Gumm/Rhodes study also demonstrated that the carrier-to-noise ratio resulting from the limited power of the analog FM transmission would preclude broadcasting an FM stereo signal.

is not credible.⁶³ Nor is the statement that only the "worst performing, least sophisticated, oldest TV receivers still on the market" suffered harmful interference,⁶⁴ since the study included 18 DTV receivers that were produced by a wide range of manufacturers and manufactured and/or purchased in the summer and fall of 2013.⁶⁵

The technical claims offered to validate an LPTV DTV analog FM radio service otherwise raise more questions than they purport to answer.

- Whereas the Gumm/Rhodes study indicated that DTV receivers can better accommodate an unmodulated FM signal than one with a 25 kHz peak deviation,⁶⁶ the Bogner/Island Joint Comments stated that "75 KHz showed no measurable difference."⁶⁷ A 75 kHz modulation peak deviation is standard for FM radio stations and is the level LPTV analog FM radio services typically use, but the potential for DTV-host interference at such a level is a significant matter requiring resolution.
- Both the Bogner/Island Joint Comments and the VTG Comments also concede that LPTV DTV stations using the 82-88 MHz spectrum are limited to 3.0 KW total average power,⁶⁸ but they differ on how much ERP should be permitted to the analog FM radio service.⁶⁹ Would either power level produce more than a rudimentary visual transmission and a limited FM service?

⁶³ See Bogner/Island Joint Comments at 2.

⁶⁴ Signal Above Comments at 6. Also not credible is the related statement that "[t]he few receivers with the old technology will be shortly phased out allowing for greater power levels." See *id.*

⁶⁵ See Gumm/Rhodes Comments at 11.

⁶⁶ Gumm/Rhodes Comments at 8.

⁶⁷ Bogner/Island Joint Comments at 2.

⁶⁸ 47 C.F.R. § 74.735(b)(1).

⁶⁹ Compare Bogner/Island Joint Comments at 3 (proposing a maximum power of 0.5 kW for the analog FM service) with VTG Comments at proposing a maximum power of 1.5 kW for the analog FM service). The VTG proposal is contrary to the results of the Gumm/Rhodes study. It also indicates an intention to favor the LPTV DTV's analog FM radio service in derogation of the station's DTV service. Under the Act, the Commission must limit the broadcasting of ancillary or supplementary services on designated frequencies "so as to avoid derogation of any

- While modern FM receivers tune in .2 MHz odd increments (88.1, 88.3, 88.5, etc.), the *Third Notice* appears to contemplate the LPTV DTV analog FM radio service utilizing a channel centered on 87.76 MHz,⁷⁰ and certain LPTV analog operations claim to operate at 87.70 MHz.⁷¹ For purposes of DTV-host interference and FM radio reception, what are the consequences of operating on the various frequencies?
- The Bogner/Island Joint Comments claim to have found that, "even with poor FM receivers, the FM signal can be at least 10 dB below the digital before evidence of noise was observed, at full volume."⁷² By contrast, the Gumm/Rhodes study found that an 87.7 MHz FM carrier, at a D/U ratio of 12.5 dB, would receive a carrier to noise ratio of only 4.8 dB (and 8.8 dB at 87.76 MHz). Widely-accepted engineering principles for FM modulation indicate that an audio signal-to-noise ratio of only 32 dB would be expected with a carrier-to-noise ratio of 9 dB. Despite the claim made in the Bogner/Island Joint Comments, the data generated in the Gumm/Rhodes study indicates that the LPTV DTV station's DTV and FM services would not be mutually compatible.

At best, the technical record in this proceeding underscores the need for further development, including field testing, before the Commission sanctions a particular method for offering an LPTV DTV analog FM radio service. As NPR advocated in its initial comments, such development work, along with the many other unresolved aspects of the LPTV DTV analog FM radio proposal, warrant deferring the proposal to a separate proceeding directed to the use of the remaining 82-88 MHz spectrum following the television broadcast auction and repacking process.⁷³

advanced television services . . . that the Commission may require using such frequencies.” 47 U.S.C. § 336(b)(2).

⁷⁰ *Third Notice*, 29 FCC Rcd. at 2554.

⁷¹ *See* VTG Comments at 4.

⁷² Bogner/Island Joint Comments at 3.

⁷³ *See* NPR Comments at 4, 13 (citing such known variables as the possibility for traditional FM radio stations to offer analog and digital radio services using 200 kHz channels and such unknown variables as the number and location of full power and DTV translators using DTV Channel 6 following the auction and repacking process).

6. As a secondary service, LPTV and TV translator stations must protect NCE FM radio stations from interference at the application stage and in actual operation. As the Commission proposed, and NPR endorsed in its initial comments, LPTV DTV stations are and should continue to be obligated to protect any other primary and incumbent secondary services from both actual and predicted interference.⁷⁴ NCE-reserved band FM stations may not have suffered interference from adjacent full power Channel 6 stations, as one commenter argues,⁷⁵ but that does not justify permitting LPTV DTV analog FM services to commence operations without regard for predicted interference. The absence of interference is likely because NCE FM station have been required by Commission rule to limit their facilities to avoid interference to full power TV channel 6 stations, a circumstance which also limited the interference *to* the NCE FM station.⁷⁶ No comparable mechanism currently exists to prevent predicted interference by LPTV channel 6 stations to adjacent NCE-reserved FM radio stations.

Therefore, while some LPTV Channel 6 interests oppose the imposition of the standard FM station interference overlap prohibition,⁷⁷ sound engineering practices, as well as the statutory obligation to impose rules governing analogous FM radio services,⁷⁸ require such a measure to avoid interference from secondary LPTV stations to primary FM radio stations. Indeed, if the Commission decides to proceed with its LPTV DTV analog FM radio proposal

⁷⁴ See *Third Notice*, 29 FCC Rcd. at 12555; NPR Comments at 9-10.

⁷⁵ See Bogner/Island Joint Comments at 3.

⁷⁶ See 47 C.F.R. §73.525.

⁷⁷ See VTG Comments at 5-6, Bogner/Island Joint Comments at 3.

⁷⁸ 47 U.S.C. § 336(b)(1).

despite the overwhelming weight of authority and reason against it, the Commission must establish clear rules governing the licensing and operation of such stations to protect public radio and other NCE stations that rely on the NCE reserved portion of the FM band to provide important public services on which millions of people rely.

Conclusion

For the foregoing reasons, and as stated more fully above and in NPR's initial Comments, NPR supports the Commission's efforts to facilitate the transition of the remaining LPTV and television translator stations to DTV operation, but NPR urges the Commission to initiate a separate proceeding specifically directed to the use of the 82-88 MHz spectrum following the broadcast television auction and repacking process if it decides to pursue its LPTV DTV analog FM radio service proposal.

Respectfully submitted,

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