

This envelope contains an original and four copies of my comments with regard to the Petition for Rule Making for WBRA-DT.

These are **comments**.
The docket number is **08-114**.
The proceeding is **RM-11443**.

Received & Inspected

AUG 11 2008

FCC Mail Room

If the Commission wishes to contact me with regard to these comments, here are several ways to contact me:

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I would be glad to assist the Commission in any way possible to clarify my comments or otherwise attempt to provide information with regard to this proceeding.

I would like to add that I was very disappointed to discover that I had to mail in my comments, rather than use the ECFS to file them. It has added a lot of extra time and frustration to filing these comments, and using the ECFS would have made the process much simpler and much more certain.

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AUG 11 2008

FCC Mail Room

I am filing these comments in support of the Petition for Rule Making for the substitution of 26* for 3* in Roanoke, Virginia, but with concerns about how adequate the replication of the analog signal will be.

First, allow me to provide some background on my situation and what my interest is in this filing. I am a frequent viewer of WBRA-TV 15, as I am within the Roanoke DMA and greatly enjoy PBS programming. I live in Charlotte County, Virginia, 79 miles from the Poor Mountain transmitters (where WBRA and the other full-service Roanoke stations are located) and use a set of roof antennas to receive the signals. Despite being outside the predicted 41 dBu coverage contour of most of the "local" television stations, I have no trouble receiving most of these signals. This is because the 41dBu coverage contours are incredibly inaccurate. The reason for this inaccuracy is due to Poor Mountain's height of 3700 feet above sea level, versus the average height of 500 feet above sea level in large areas of the eastern part of the DMA, which is unaccounted for by the stations' "height above average terrain" of approximately 2000 feet. According to my measurements, I believe that I personally have line of sight to Poor Mountain, despite my distance, and that is why I receive the stations from there so well.

I use a Winegard PR-8800 UHF roof antenna to receive most of the signals from Poor Mountain more than 99 percent of the time, along with a newly-purchased Antennacraft Y5-2-6 for low-VHF reception. On the new Zenith-branded CECB receivers that we recently purchased, all of the Roanoke stations show 100 percent signal except for WBRA-DT on channel 3. Even discounting issues with e-skip interference, which will become largely irrelevant when the low-VHF band clears out next year, the channel 3 signal simply is not strong enough to cover the distance that all the UHF signals cover. Further, when tropospheric ducting allows for the signal to be decoded, any lightning strike within 50 miles will cause the signal to break up and drop out. Using a much older Hauppauge WinTV-D receiver, all of the UHF signals from Poor Mountain show 21.4 dB SNR, the maximum for the receiver, while WBRA-DT frequently hovers around 14 dB, which is not enough for even the superior CECB receivers to deliver an acceptable signal. At present, I watch all the channels in digital form with CECB receivers except for WBRA, which I watch via the analog receiver in the TV set.

I have done signal testing for a friend just outside of the town of Keysville, possibly the eastern-most town in the Roanoke DMA. From a distance of 93 miles from Poor Mountain, I was able to receive WDBJ-DT, WSLS-DT, and WFXR-DT utilizing only a Silver Sensor indoor antenna and a 26 dB Channel Master preamplifier.¹ On analog, reception of all the local stations was possible (WDBJ, WSLS, WSET, WBRA, WFXR, and WPXR). In addition, analog reception of WVIR in Charlottesville and WRLH and WCVB in Richmond were possible, and weak and unusable digital signals for WVIR-DT, WTVR-DT, and WRLH-DT were noted. I imagine that all of those signals and more could be expected with an outdoor antenna located on the roof, used with a signal preamplifier,² both of which my friend is strongly considering installing.

In light of these issues, I was extremely excited to hear that WBRA was planning to file to relocate from channel 3 to a UHF channel. I had assumed that WBRA-DT would be filing to relocate to channels 16 or 35, which at first glance looked to be very open and available for their use.

- 1 I also received WSET-DT from Lynchburg, but this station was a closer 67 miles away, and Keysville falls within the WSET-DT 41 dBu protected service contour.
- 2 In this area, preamplifiers are extremely common. The signals do make it out here, but some are often weak and a preamplifier will clean them up nicely.

However, upon locating their Petition for Rule Making for channel 26, I grew concerned about their application.

Do not misunderstand me; I am very pleased that Blue Ridge Public Television would like to relocate WBRA to UHF, and I imagine that many others in the Roanoke DMA will be pleased with it. However, I am quite concerned that this signal will fail to replicate their analog coverage in the eastern portion of the DMA.

First of all, channel 26 is not a completely open channel. Channel 26 is currently utilized by the 800 kW signal of WRLH-DT in Richmond. In no other case did the Commission allocate the same channel to both Richmond and Roanoke, even during the digital transition when channels were packed in as closely as possible.³ In some places in the Roanoke DMA, both the Richmond and Roanoke stations can be viewed at the same time with a single antenna placement. I have seen first-hand examples of this in communities such as Appomattox, Phenix, Keysville, Cullen, as well as some locations in the far western parts of the Richmond DMA such as Pamplin City. The FCC even reflects these viewing patterns through its SHVERA list of "significantly viewed" stations; WTVR from Richmond is listed as "significantly viewed" in Charlotte County, and both WTVR and WWBT are listed as "significantly viewed" in Nelson County. Both counties are located within the Roanoke DMA.

Indeed, Blue Ridge Public Television is apparently aware of this, and has asked the Commission for a directional pattern on channel 26*. This pattern is clearly designed to protect WRLH-DT from interference due to the proposed 1000 kW signal of WBRA-DT, but this poses its own set of problems. Lynchburg is one of the cities Blue Ridge Public Television noted in its application as having less than satisfactory service on channel 3. The proposed pattern will put only 49.2 kW of signal in the direction of Lynchburg on channel 26, which will ensure that WBRA remains the weakest Poor Mountain signal in Lynchburg. In my direction, I will only receive 55.7 kW. Coupled with the fact that WRLH-DT in Richmond will be causing interference in some of these areas, I am concerned that the proposed signal will fail to adequately cover the eastern edge of the DMA.

This is not the fault of Blue Ridge Public Television. Few UHF channels remain available for use by Blue Ridge Public Television from Poor Mountain, and I am confident that the consulting engineer(s) employed chose what they believed to be the best available channel.⁴ While an alternate channel selection would be the best option, given that channels 16 and 35 were seemingly ruled out, there are no alternate channels available to them. Given that set of circumstances, one option would be to request that Blue Ridge Public Television set up a translator in the Lynchburg area⁵ if money

3 The Commission did assign WCVE-DT to channel 24, same as WDRL-TV analog in Danville, however WDRL-TV's analog signal has such poor coverage that even at my location I nearly never observed its signal even in the strongest of atmospheric events. Despite this, WCVE-DT was still later reassigned to channel 42.

4 I am studying at the University of Virginia with the goal of becoming a broadcast consulting engineer in the future, and while I observed nothing immediately wrong with channels 16 or 35, I imagine there was some obstacle that made these channels undesirable that I am unaware of. I admit I am not fully familiar with such interference analyses and that those channels only appear to be available to my unexperienced eye. My only guess is that the directional patterns of fellow Poor Mountain broadcasters WFXR-DT 17 and WPXR-DT 36, respectively, would cause some predicted interference problems, even though non-directional WDBJ-DT 18 coexists peacefully with WFXR-DT 17.

5 Blue Ridge Public Television used to operate a translator, W80AN, licensed to Amherst, Virginia. According to FCC records, W80AN attempted to relocate to channel 46 from channel 80 and boost power, but the application was dismissed in 1999 and the license deleted some time after.

permits, or perhaps the Commission could even grant Blue Ridge Public Television another full-service license on an available channel in the Lynchburg area⁶ that could be operated from a nearby mountain top.⁷ A less attractive option would be to shuffle another station around to allow both Blue Ridge Public Television and the other licensee involved, whoever that would be, to utilize prime UHF channels. I choose not to speculate on such swaps, but I am confident that such an arrangement could be made if the parties were willing to do so. I am also as confident as I can be that a shuffle of this nature is technically possible given the stations that would be involved.

Despite all of this, I still think an alternate channel would be the best solution, and request that the Commission at least investigate allocating channel 16* to WBRA-DT with an omni directional antenna at 460 kW.⁸ While I have neither the financial resources nor the expertise to conduct a full interference study, I have done a "logical" survey of channel 16* and attached it to this document as Exhibit I. Though I do not expect the Commission to accept such an unorthodox "survey," and this document has not been filed as a counterproposal, I am extremely concerned for the future coverage of WBRA-DT, and would hope that the Commission would allow a non-commercial educational station like WBRA to continue full service to the public through a more open channel with an omni directional antenna. If I have made some critical oversight in my analysis that finds 16* to be unusable, please disregard this section and consider the only the rest of the comments in this document.

In conclusion, these comments generally support the substitution of 26* for 3* in Roanoke, Virginia. Many in Roanoke, the New River Valley, and the rest of the western two-thirds of the DMA will greatly benefit from the proposed substitution. I feel that channel 26*, even with these issues, is far superior to the current 3* allocation. These comments have been submitted only to ensure that the Commission understands the possible shortcomings of the 26* allocation, and in the hope that the Commission and Blue Ridge Public Television can take some action to alleviate these concerns.

I appreciate the Commission taking the time to read and evaluate these comments.

Sincerely,



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⁶ A quick check shows that channels 7, 9, 34, 39, and 41 could be investigated for this purpose, though channel 7 should probably be avoided due to a second-harmonic problem with WRVL-FM 88.3C1.

⁷ I personally would like to see such a signal from the Rocky Mountain tower site which is home to WYYD-FM and TBN translator W40BM, both of which have fantastic coverage across the eastern section of the DMA.

⁸ 1000 kW as requested by Blue Ridge Public Television on channel 26 would be preferable, assuming it would fall within the FCC's interference guidelines. I only selected 460 kW because it would appear to be the most likely power level to meet interference guidelines.

Exhibit I: "Logical" Survey of Channel 16* from Poor Mountain, Virginia

In conducting this survey, I am using common sense and what knowledge I have of FCC regulations in order to rationalize a channel 16* allocation on Poor Mountain near Roanoke, Virginia. This is in no way intended to represent a Longley-Rice interference study or any other FCC-accepted technical study.

In deciding which stations to review, I am checking all stations on channels 15, 16, and 17 within 320 km (198.8 miles) of the WBRA tower on Poor Mountain. I chose this distance because it is larger than both the limits set for digital co-channel stations in 73.623 and the even larger limits set for analog co-channel stations in 73.610. I am operating under the assumption that the proposed Poor Mountain 16* would operate at 460 kW, the same power level as WDBJ-DT 18, for reasons of making my point easier to understand. I am also making the assumption that every station which has filed for maximization is approved, though any maximizations which are denied would only reduce interference issues noted in this analysis.

Using the FCC's TV query⁹, I retrieved this list of stations located within 320 km of WBRA:

Channel 15:

WRPX-DT Rocky Mount, NC (213.39 km / 132.59 mi)
WNSC-DT Rock Hill, SC (272.81 km / 169.52 mi)
WKMR-DT Morehead, KY (306.66 km / 190.55 mi)

Channel 16:

WKHA-DT Hazard, KY (269.32 km / 167.35 mi)

Channel 17:

WFXR-DT Roanoke, VA (0.05 km / 0.03 mi)
WUNE-DT Linville, NC (196.40 km / 122.04 mi)
WNCN-DT Goldsboro, NC (223.12 km / 138.64 mi)
WQCW-DT Portsmouth, OH (232.00 km / 144.16 mi)

First, Poor Mountain 16* meets the spacing requirements set forth in 73.623. (See Exhibit II)

There should be no interference with regard to **WKHA-DT** on channel 16 or **WKMR-DT** on channel 15. In addition to the huge distance, the stations are separated by many mountains. Further, both are operating from a relatively low antenna height and with a relatively small amount of power. In addition, both stations are part of a network of non-commercial educational television stations in the state of Kentucky, and any received interference should be mitigated by the availability of alternative signals featuring the same programming. The reverse is true as well; **WKHA-DT** in particular has a large area of overlap with Blue Ridge Public Television's **WSBN-DT**, thus making any interference received on the proposed Poor Mountain 16* unimportant.

⁹ <http://www.fcc.gov/fcc-bin/tvq?state=&call=&arn=&city=&chan=15&cha2=17&serv=DT&type=0&facid=&list=1&dist=320&dlat2=37&mlat2=11&slat2=46&dlon2=80&mlon2=9&slon2=17&size=10>

No interference to **WNSC-DT** on channel 15 should be expected. **WSLS-DT** is operating at 950 kW from Poor Mountain¹⁰ while peacefully co-existing with both **WXLV-DT 29** and **WXII-DT 31** which are much closer to Poor Mountain than **WNSC-DT** is, and at much higher levels of power.

The last station under consideration on channel 15 is **WRPX-DT** in Rocky Mount, North Carolina. This station currently suffers from interference due to the analog signal of **WBRA**, and allowing the proposed Poor Mountain 16* to exist would reduce this existing interference. Further, the station airs programming that is nearly identical to that of **WPXR-DT** in Roanoke and **WGPX-DT** in Burlington (Greensboro DMA). Both of these stations have some amount of overlap, and **WGPX-DT** in particular would likely overlap in interference areas, thus allowing viewers of **ION** programming an alternate source for that programming.

The larger issues with a channel 16 allocation begin when investigating adjacent-channel interference on channel 17. However, I wish to suggest that such interference should be ignored entirely. Logically, it makes absolutely no difference whether or not the proposed Poor Mountain 16* interferes with anything on channel 17. The reason for this is that **WFXR-DT** on channel 17 transmits from Poor Mountain, as does **WDBJ-DT** on channel 18. Therefore, any stations which would receive interference from the proposed Poor Mountain 16* are already receiving interference from one or both of these stations. The discrepancy between the antenna patterns of **WFXR-DT** and the proposed 16* could theoretically cause a problem, but clearly they have not done so in practice, as **WDBJ-DT 18** is omni directional and coexists peacefully with directional **WFXR-DT** on channel 17, and **WFXR-DT** has even asked the Commission for permission to increase power from 400 kW to 695 kW.¹¹

WUNE-DT in Linville is actually very short-spaced to **WFXR-DT**, but this should be irrelevant to the proposed Poor Mountain 16* because of mountains blocking the signals from conflicting. Beyond that, any interference that **WUNE-DT** would receive is probably already being received due to the existence of **WFXR-DT 17** and **WDBJ-DT 18**, with the former having much more impact than the latter. Beyond even that, both **WUNE-DT** and **Blue Ridge Public Television** have repeater stations which ensure that even in any actual interference areas, the programming of both stations should continue to be available. The programming of **Blue Ridge Public Television** is also available on **WMSY-DT 42** in Marion, and **UNC's** programming is available on full-service **WUNL-DT 32** in Winston-Salem as well as on several translators in the mountains of North Carolina.

Interference to **WNCN-DT** in Goldsboro is irrelevant because the station is already slated to receive interference from **WFXR-DT** on 17, and there will be so much overlap between **WFXR-DT** and the proposed Poor Mountain 16* that little or no additional harm would come from it. Further, if interference to **WUNC-DT 25*** would be allowed for **WBRA-DT** on 26*, then interference to **WNCN-DT 17**, which is both weaker and further away, should easily be allowed for a proposed Poor Mountain 16*.

Finally, predicted interference to **WQCW-DT** in Portsmouth is irrelevant because there are multiple mountains between it and the proposed Poor Mountain 16*. Further, the station would already receive any interference from **WDBJ-DT** in nearly the exact same areas as it already would from the

¹⁰ With an application to boost to 1000 kW. See Application BPCDT-20080619ABS.

¹¹ See Application BPCDT-20080619AJU.

proposed Poor Mountain 16*, thus adding no little or no new interference.

In conclusion, there is no logical reason I can see why WBRA-DT could not operate on channel 16* from Poor Mountain. There would be a minimal increase in interference to other stations, but the vast majority would be in areas overlapping with repeaters of stations, or in areas which are already receiving interference from other Poor Mountain television stations and thus would receive little or no additional harm from 16*.

Exhibit II: Demonstration of Compliance with 73.623 Spacing Rules

Channel 16*, Digital
 Zone II
 Database: FCC 7/28/08

Call City of License	Authorization File Number	Channel Zone	Distance (km)	Required (km)
WAPG-CA Greeneville, TN	CA LIC 20030709AAE	14 II	263.49	96.6 Clear
WKMR Morehead, KY	DT LIC 20020201ABI	15 II	306.66	110.00 Clear
WRPX Rocky Mount, NC	DT LIC 20020510AAF	15 II	213.39	110.00 Clear
WNSC Rock Hill, SC	DT LIC 20060111AAK	15 II	272.81	110.00 Clear
WKHA Hazard, KY	DT LIC 20020205AAW	16 II	269.32	223.70 Clear
WFXR Roanoke, VA	DT LIC 20080619AJU	17 II	0.05	< 24.00 Clear
WUNE Linville, NC	DT APP 20080616ABZ	17 II	196.40	110.00 Clear
WNCN Goldsboro, NC	DT APP 20080619ABV	17 II	223.12	110.00 Clear
WQCW Portsmouth, OH	DT APP 20080618ADI	17 I	232.00	110.00 Clear
WXOB-LP (CA) Richmond, VA	CA APP 20030818AAO	17 I	238.24	80.5 Clear
WLNN-LP (CA) Boone, NC	CA LIC 19970516JB	24 II	174.86	96.6 Clear
WAZH-CA Harrisonburg, VA	CA LIC 19960823JC	24 I	219.34	80.5 Clear