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June 28, 2005

VIA ECFS

Marlene H. Dortch, Esq.
Secretary
Federal Communications Commission
Washington, D.C. 20554

**Re: MB Docket No. 03-15
WCYB-TV, Bristol, Virginia, Facility ID No. 2455
FCC File Nos. BLCDDT-20020812ACC *et al.*
Request for Limited Relief from the July 1, 2005
Interference Protection Deadline**

Dear Ms. Dortch:

Pursuant to the Public Notice, "DTV Channel Election Issues – Compliance with the July 1, 2005 Replication/Maximization Interference Protection Deadline; Stations Seeking Extension of the Deadline," DA-05-1636 (June 15, 2005) (the "Public Notice"), BlueStone License Holdings Inc. ("BlueStone"), licensee of WCYB-TV, Channel 5, and WCYB-DT, Channel 28, both Bristol, Virginia, (collectively, "WCYB" or the "Stations"), by its attorneys, hereby requests limited relief from compliance by WCYB-DT with the July 1, 2005 replication and maximization requirements established in the Report and Order, "Second Periodic Review of the Commission's Rules and Policies Affecting the Conversion To Digital Television," FCC 04-192 (released Sept. 7, 2004) ("Second Periodic Review Order"). Specifically, BlueStone requests a limited exemption from the Second Periodic Review Order's "use-it-or-lose-it" regimen, *i.e.*, the requirement that WCYB-DT, as the NBC Network affiliate serving the 89th-ranked Tri-Cities, TN-VA Designated Market Area ("DMA"), construct full, authorized facilities that serve 100 percent of the number of viewers encompassed within the April 1997 Grade B service area of

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WCYB-TV (as adjusted for the 2000 Census) upon which WCYB-DT's replication coverage is based. 1/

As explained below, due to factors including terrain features in the Tri-Cities market and the propagation characteristics of WCYB-DT's assigned digital channel 28, WCYB-DT will not be able to achieve the 100-percent "use-it-or-lose-it" coverage standard at the full facilities authorized for WCYB-DT -- or, in fact, at any power level. Indeed, the Commission itself previously has recognized that a WCYB-DT operation on channel 28 will never be able to replicate the coverage achieved by its paired analog operation on channel 5. For this and other reasons, BlueStone intends to relinquish WCYB-DT's assigned digital channel and migrate its digital operations to WCYB-TV's current analog channel 5 at the end of the transition. Accordingly, the public interest would be served by, and fundamental fairness requires, grant of a limited exemption to the "use-it-or-lose-it" benchmark so that WCYB-DT may retain and "carry over" interference protection to its full authorized service area following the digital transition.

Introduction

BlueStone supports the Commission's efforts to convert the nation's broadcast television system from analog to digital technology. WCYB was an early and enthusiastic proponent of the DTV transition, and has aggressively invested in facilities and equipment in order to roll out and operate a full service digital facility that showcases the consumer and other public interest benefits of digital broadcasting.

In May 2000, only two months after the Commission began its first DTV periodic review and well in advance of the May 2002 DTV activation deadline, WCYB-DT became the first commercial digital station in the state of Virginia to go on the air. Moreover, while many of its competitors activated "disposable" transmitters capable of delivering an ERP of only approximately 1 kW, WCYB fully embraced the Commission's commitment to DTV and invested \$600,000 to acquire and install the largest transmitter and the highest gain antenna the Stations' tower could support -- facilities capable of producing an ERP of 129 kW.

1/ This letter request supersedes and incorporates by reference BlueStone's "Petition for Limited Relief from the July 1, 2005 Replication and Maximization Requirements," filed on June, 9, 2005, prior to the release of the *Public Notice*.

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Later in 2000, WCYB-DT became the first commercial station in the nation to commence multicasting on its digital spectrum. Working closely with Harris Corporation, WCYB engineering personnel helped develop encoder specifications that eventually enabled WCYB-DT to broadcast four discrete program streams: the NBC network programming broadcast over WCYB-TV; WB network programming, for which up to that point there had been no local outlet in the Tri-Cities market; the PAX network, which also had not been able to secure a local over-the-air outlet; and local news, Doppler weather radar and other local informational programming. ^{2/} Two years later, WCYB-DT became the first station in the Tri-Cities market to broadcast in high definition, at a further cost of \$200,000, when it carried the entire NBC Winter Olympics schedule in HD.

Even as WCYB evaluated whether to migrate its digital operations to WCYB-TV's current analog channel 5 for post-transition digital operation, it continued to invest in and improve WCYB-DT's digital facilities on channel 28. In May 2002, WCYB undertook a \$2 million project to erect a new tower at its Holston Mountain site; install a full-power digital and analog stacked antenna system and transmission lines capable of handling a full-power signal; and double the size of WCYB-DT's transmitter, producing an ERP of 182.5 kW.

Following release of the *Second Periodic Review Order* and in order to evaluate the modifications to its digital station that would be necessitated by the July 1, 2005 build-out deadline, WCYB undertook a study to determine the extent of coverage that could be achieved if WCYB-DT operated with a maximum facility on channel 28. The study found, however, that WCYB-DT cannot meet the "use-it-or-lose-it" coverage benchmark established in the *Second Periodic Review Order*. In particular, the study concluded that the difficult terrain in the Tri-Cities market and the inherent propagation limitations of channel 28 render it physically incapable of serving more than approximately 90.9 percent of the population served by WCYB-TV's analog signal on channel 5. See Engineering Statement of Jules Cohen, P.E. ("Engineering Statement") (Attachment 2). Simply stated, therefore, "[i]f the audience now served by the analog operation of WCYB-TV is to be provided with an interference-free digital signal, the extent of protection cannot be based on the operation of WCYB-DT on channel 28." *Id.* at 1-2.

^{2/} PAX subsequently elected to pursue direct-to-cable local distribution and was dropped from the WCYB-DT multicast lineup. For a detailed discussion of WCYB-DT's facilities and multicasting capability, see Cupp, T., "Multicasting is in the Air," *Digital TV*, February 2001, at 53-54.

A. A WCYB-DT Operation on Channel 28 Can Not Provide Service to 100 percent of the Number of Viewers Served by WCYB-TV on Channel 5.

WCYB-DT was assigned channel 28 in the Table of Allotments established by the Commission in the *Sixth Report and Order*, "Advanced Television Systems and their Impact Upon the Existing Television Broadcast Service," 12 FCC Rcd 14588 (1997) and Appendix B ("*Sixth Report and Order*"). The Commission explained in the *Sixth Report and Order* that its goal in developing the digital Table of Allotments was to "ensure that broadcasters have the ability to reach the audiences that they now serve and that viewers have access to the stations that they can now receive over-the-air." *Id.* at par. 29.

Significantly, however, the Commission's own technical analysis established that the noise-limited service population of a channel 28 WCYB-DT operation allotted 1,000 kW ERP with height above average terrain of 680 meters would be expected to reach only approximately 90 percent of that covered by the analog WCYB-TV companion operation on channel 5. *Second Memorandum Opinion and Order on Reconsideration of the Fifth and Sixth Reports and Orders*, "Advanced Television Systems and their Impact Upon the Existing Television Broadcast Service," MM Docket No. 87-268 (Dec. 18, 1998), App. B at B-73. In other words, the Commission previously has recognized that, even with maximum facilities, *WCYB-DT operating on channel 28 cannot replicate the interference-free service population of the WCYB-TV operation on channel 5*. As noted above, BlueStone's recent technical studies undertaken following the release of the *Second Periodic Review Order* confirm the Commission's conclusion. *See* Engineering Statement at 2-3. For this and other reasons, including the demonstrably higher operating costs of a limited coverage channel 28 digital operation, BlueStone has elected to surrender channel 28 at the end of the digital transition and migrate WCYB-DT's operations to WCYB-TV's current NTSC channel 5. *See* FCC File No. BFRECT-20050209AIL (Form 382).

The limitations on WCYB-DT's operation on channel 28 are the product of two immutable circumstances: terrain and the laws of physics. The Stations are located amid a series of mountain ridges. Not surprisingly, the largest population clusters in the region lie at the lower elevations; and, as is typical in this environment, higher broadcast frequencies -- such as WCYB-DT's operation on channel 28 -- are less likely to penetrate lower-elevation population clusters shadowed by mountain ridges. The problem is exacerbated by the limited ability of a digital receiver to interpolate data loss due to interference. Unlike analog

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receivers, DTV receivers do not process interference as static or “noise;” instead, once a signal is encumbered with too much interference, the DTV receiver simply displays no image at all.

Consequently, “[e]ven with maximum allowed power and antenna height, WCYB-TV service on channel 28 cannot duplicate the interference-free service population of the WCYB-TV service on channel 5 not affected by terrain losses.” Engineering Statement at 2. Thus, under the “use-it-or-lose-it” standard adopted in the *Second Periodic Review Order*, WCYB-TV finds itself in the anomalous position of losing interference protection to a portion of its authorized service area equivalent to nearly 10 percent of the population encompassed within WCYB-TV’s service area, solely because of the inherent limitations of its assigned digital channel -- limitations that previously have been recognized by the Commission.

Such a result would be wholly inequitable. It also would be contrary to the public interest in the digital transition and the Commission’s underlying objectives in implementing the “use-it-or-lose it” requirements. To date, WCYB has expended nearly \$3 million in capital improvements alone to launch a digital service on a channel the Commission recognizes is not an acceptable replacement for its paired analog operation on channel 5. WCYB should not be further penalized by losing interference protection, and a significant fraction of its viewers should not be put at risk to lose their local NBC network service following the transition, as a result of the physical limitations of the channel assigned to it for its digital operations during the transition period.

The Commission has made exceptions for stations facing insoluble complications in other aspects of the conversion to digital broadcasting. BlueStone believes a similar approach is warranted in this matter. Fortunately, as noted above, WCYB is positioned to migrate its digital operations to channel 5 at the end of the transition. Grant of a limited exemption to the July 1, 2005 build-out requirement would enable BlueStone to preserve interference-free digital service throughout WCYB-TV’s channel 5 service area thereafter.

B. The Commission Should Exempt WCYB-TV From Constructing Full-Service Facilities Prior to the Conclusion of the Digital Transition.

Fairness mandates that the Commission exempt WCYB from the July 1, 2005 “use-it-or-lose-it” build-out deadline, and the prescribed consequences for failing to meet it, adopted in the *Second Periodic Review Order*. WCYB has been

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an exemplary participant in the DTV conversion process; at each stage, it has met the Commission's requirements in good faith and has continually demonstrated its willingness to commit the technical, financial and other resources necessary to ensure the success of its digital facilities and, by extension, of the Commission's transition plan. WCYB-DT's inability to meet the 100-percent replication requirement is the product of physics, not a lack of will.

The Commission consistently has recognized the need for flexibility in the enforcement of digital transition mileposts. For example, in the *Fifth Report and Order*, "Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service," 12 FCC Rcd 12809, 12841-42 (1997), the Commission stated that it would be prepared to extend applicable construction deadlines where a broadcaster had been unable to complete construction due to circumstances "beyond the licensee's control if the licensee has taken all reasonable steps to resolve the problem expeditiously." The Commission has granted extensions of interim DTV build-out deadlines to stations that were subject to "uncontrollable" circumstances; such circumstances have been deemed to include, for example, delays in receipt of required land-use approvals, insufficiency of the available electrical grid, and defective equipment. See *DTV Build-Out Requests for Extension of the Digital Television Construction Deadline, Commercial Stations with May 1, 2002 Deadline*, FCC 05-67 (2005); *DTV Build-Out Requests for Extension of the Digital Television Construction Deadline, Commercial Stations with May 1, 2002 Deadline*, FCC 04-124 (2004). Specifically with respect to the "use-it-or-lose-it" regimen, the *Second Periodic Review Order* (at par. 87) establishes a waiver process for stations incapable of meeting the build-out deadlines due to, among other things, "circumstances beyond a station's control."

WCYB-DT is facing precisely the type of "uncontrollable" -- indeed, unavoidable -- complication that would appropriately be addressed by forbearance from the interim build-out requirement. Both the propagation characteristics of its assigned digital channel 28 and the terrain in the Tri-Cities DMA are indisputably beyond WCYB-DT's control. Meanwhile, the inherent coverage limitations of a full-facilities digital operation on channel 28 previously have been recognized by the Commission. Therefore, in order to address the anomaly described above, BlueStone requests that the Commission

- Permit WCYB-DT to continue to operate on channel 28 at its current power level for the remainder of the transition period, and then to migrate its digital operation to its full authorized facilities on WCYB-

TV's current NTSC channel 5 at the end of the transition; and

- Maintain WCYB-DT's post-transition interference protection to the full extent of WCYB-TV's existing interference-free Grade B contour.

Both from a policy standpoint and as a practical matter, such an approach would be analogous to and consistent with the Commission's approach to the retirement of assigned out-of-core digital channels. Thus, in the *Second Periodic Review Order* (at pars. 89-97), the Commission concluded that a licensee that has been assigned an out-of-core digital channel should be allowed to "flash cut" to digital operation on its current in-core analog channel without losing interference protection on its ultimate in-core digital channel. In adopting this approach for out-of-core assignments, the Commission recognized both the inefficiency and inherent unfairness of requiring a licensee to construct to full facilities on a channel that ultimately is unsuitable for DTV operations.

This describes WCYB-DT's predicament precisely. *First*, the propagation limitations of its assigned digital channel 28 make it physically impossible for WCYB-DT to achieve the 100 percent "use-it-or-lose it" replication requirement. *Second*, given channel 28's ineffectiveness for post-transition use by WCYB-DT, BlueStone has elected to return the channel 28 spectrum at the end of the transition. Moreover, attempting to achieve 100 percent replication on channel 28 not only will be futile, but also will result in precisely the "undue 'stranded investment'" the Commission wishes to avoid. *See Second Periodic Review Order* at pars. 82, 89-97. BlueStone estimates that the capital expense alone of increasing its channel 28 operation to a 1,000 kW facility will be \$1.4 million – roughly half again as much as has been expended to date on WCYB-DT's existing facility. Contrary to the view stated in the *Second Periodic Review Order* (at par. 82), the additional transmitter cabinets and related equipment that BlueStone will have to deploy in order to achieve this interim power level will have no use following the transition, when WCYB-DT will operate permanently on channel 5. Indeed, in order to achieve the digital noise-limited signal strength matching that of the existing NTSC Grade B, WCYB-DT will need only approximately one-tenth of WCYB's currently-authorized NTSC power. The existing channel 5 transmitter can be modified, at a cost of only approximately \$200,000, so that it will be more than adequate to achieve the required digital ERP of approximately 7.2 kW.

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Grant of this request will serve the public interest because preserving interference protection for WCYB-DT will ensure that the benefits of digital service from the Tri-Cities DMA's NBC network outlet will be available to all the current viewers of WCYB-TV following the transition. Indeed, under the unique circumstances described above, it would be contrary to the underlying objectives of the digital transition to compromise the future operation of WCYB-DT -- and thereby diminish, rather than facilitate, the availability of digital broadcast service to the public -- by the rote application of the July 1, 2005 build-out requirement. *Cf. WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969), *cert. denied*, 409 U.S. 1027 (1972) (exemption appropriate where application of a rule would contravene its fundamental purposes).

Conclusion

WCYB's demonstrable leadership in the DTV conversion process and its continuous forward-looking development of WCYB-DT's facilities and operations demonstrate its good-faith efforts to promote the digital transition. These efforts, combined with the unique limitations of its assigned digital channel -- and fundamental fairness -- warrant a limited exemption from the July 1, 2005 build-out requirement so that WCYB-DT does not lose interference protection to its post-transition operation. Grant of the requested relief will fulfill the Commission's objective of ensuring that, following the transition, WCYB's viewers "have access to the stations that they can now receive over-the-air." *Sixth Report and Order* at par. 29.

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Please direct any questions regarding this submission to the undersigned.

Respectfully submitted,

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ATTACHMENT 1

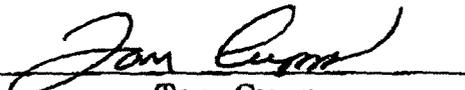
DECLARATION AND VERIFICATION OF TOM CUPP

The undersigned, Tom Cupp, hereby declares under penalty of perjury:

I am Chief Engineer of WCYB-TV and WCYB-DT, both Bristol, Virginia, a position I have held since 1990. In my capacity as Chief Engineer I have overall responsibility for and oversight of the design, construction and ongoing technical operations and maintenance of the WCYB-TV and WCYB-DT facilities.

I have reviewed the foregoing letter and the materials filed in support thereof. With the exception of the facts contained in the verified Engineering Statement of Jules Cohen, P.E. (Petition Attachment 2), the factual information included in the letter was prepared by me or under my supervision and is true and correct based on my personal knowledge.

Executed on June 28, 2005.


Tom Cupp

Attachment 2

Engineering Statement of Jules Cohen, P.E.

**ENGINEERING STATEMENT ON BEHALF OF
BLUESTONE LICENSE HOLDINGS INC.
WCYB-DT, BRISTOL, VIRGINIA**

This engineering statement, prepared on behalf of Bluestone License Holdings Inc., licensee of WCYB-TV and WCYB-DT, Bristol, Virginia, is in support of a pleading directed to the matter of the degree of protection to be accorded WCYB-DT at the end of the transition to an all-digital, over-the-air television broadcast system.

The WCYB stations transmit from a location on Holston Mountain within the Appalachian Mountain Chain. The area is characterized by a series of mountainous ridges running approximately along a northeast-southwest line. Typically for areas such as this, populations are clustered at lower elevations near rivers and on plains that provide acceptable living and farming conditions. Television signal propagation to the residents and even to some of the cable headends can be far from the ideal of a line of sight. A characteristic of that signal propagation is that the higher the frequency, the lesser portion of the signal is diffracted into areas shadowed by the nearby mountain ridges.

NTSC station WCYB-TV operates on channel 5 (76 to 82 MHz). WCYB-DT has been allotted to channel 28 (554 to 560 MHz). After giving consideration to the matters described in the foregoing paragraph and being advised further that power line noise has not been a problem in the WCYB-TV reception area, the recommendation was made to select the option of returning digital operation to channel 5 at the end of the transition period. That recommendation was accepted and the Commission was so notified.

A serious matter relating to the use of channel 5 by WCYB-DT is the degree of protection that will be afforded the station in the ultimate allotment of digital television frequencies and permissible average effective radiated power over the transmission channel. If the audience now served by the

JULES COHEN, P.E.
Consulting Engineer

analog operation of WCYB-TV is to be provided with an interference-free digital signal, the extent of protection cannot be based on the operation of WCYB-DT on channel 28. Even with maximum allowed power and antenna height, WCYB-DT on channel 28 cannot duplicate the interference-free service population of the WCYB-TV service on channel 5 not affected by terrain losses. That situation was recognized by the Commission in its Second Opinion and Order on Reconsideration of the Fifth and Sixth Reports and Orders (MM Docket No. 87-268, Nov. 24, 1998). Even though the digital operation was allotted 1,000 kilowatts average effective radiated power on channel 28 with height above average terrain of 680 meters, the noise-limited service population was expected to reach only 89.7 percent of that covered by the analog companion station on channel 5.

That conclusion of lesser reach was confirmed in the December 21, 2004, analysis in Table II of Station NTSC and DTV Replication Information. For the WCYB stations, NTSC population served was just under 1.5 million people, but the projected WCYB-DT population served based on the 1998 allotment was less than 1.4 million people.

To provide a suitable platform for high-power digital operation, a new tower was erected holding antennas for both the analog and digital WCYB operations. That system is now licensed. WCYB-TV operates on channel 5 with maximum ERP of 71.7 kilowatts at a height above average terrain of 741 meters. WCYB-DT operates on channel 28 with average digital ERP of 182.5 kilowatts at a height above average terrain of 757 meters.

A study was undertaken to determine what coverage could be achieved if WCYB-DT operated with a maximum facility at its new antenna height. Since 73.622(f)(8)(ii) would allow only 218.5 kilowatts power on channel 28 for a new facility with height above average terrain of 757 meters, that power was avoided and, instead, a determination was made of the power at 757 meters that would

JULES COHEN, P.E.
Consulting Engineer

provide coverage equivalent to that provided by a facility operating with 1000 kilowatts at 680 meters. Average effective radiated power of approximately 680 kilowatts met that criterion.

To make the desired calculations, use was made of the program known as "tv_process", the same program employed by the Commission. Terrain losses were found to amount to 29 percent of the total noise-limited area on channel 28. A similar calculation was made for the analog operation on channel 5. Those terrain losses amounted to only 17 percent of the total area that would receive at least Grade B signal strength absent the terrain losses. The same loss percentages were found to apply to the operating parameters in the 1998 allotment plan.

Since population is not distributed evenly throughout the service area, a more significant UHF disadvantage is obvious from the data provided in Figure II. The population served by the maximum digital facility on channel 28 is only 90.9 percent of the analog population on channel 5.

In the context of the nature of the terrain in the WCYB service area, UHF coverage can never match the coverage of a low band VHF television broadcast station with both operations at the maximum allowed by FCC rules.



Jules Cohen, P.E.

June 8, 2005