

File Number BNPFT-20030317FSV

Boone, North Carolina

Application for a new FM Translator

On Channel 261

by

Wake Forest University

Exhibit 1

Grid Preclusion Showing

July 2013

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Declaration

I declare, under penalty of perjury, that I am a technical consultant to broadcasting and other communications systems, that I have over twenty-five years of experience in the engineering of broadcast and other communications systems, that I am familiar with the Federal Communications Commission's Rules found in the Code of Federal Regulations Title 47, that I am a Professional Engineer registered in North Carolina, that I have prepared or supervised the preparation of the attached Exhibit 1, Grid Preclusion Showing, for Wake Forest University, and that all of the facts therein, except for facts of which the Federal Communications Commission may take official notice, are true to the best of my knowledge and belief.



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Narrative

This Exhibit supports an amendment to an Auction 83 construction permit application for a new FM translator on Channel 261 in Boone, North Carolina, file number BNPFT-20030317FSV. The tech box proposal (short form application) was filed in a filing window for Auction 83. This Exhibit provides a preclusion showing required in a Public Notice¹ of a window to file long form applications for further processing.

This application proposes a minor modification from the original short form application. Specifically, a new primary station is provided, commercial FM station WZJS, Banner Elk, North Carolina, status is changed to fill-in, a new site is proposed, elevation is decreased, the antenna is changed, a directional antenna is proposed, and the channel is changed to the third adjacent channel. The minor modification creates no conflicts with any other Auction 83 tech box proposals, as will be shown in the Allocations Exhibit.

This facility protects its primary station, WZJS (FM), channel 264A, third adjacent channel, by Undesired to Desired Ratio protection. A waiver request will be included in the long form application for this facility. The interference contour for WZJS (FM) remains at least 6 meters above ground at all points, with a maximum extent less than 90 meters.

Required Showings

This facility is located outside the Market Grid of the Johnson City (Tennessee) Market, but within 39 kilometers of the Johnson City Grid. The Johnson City market is listed as a Spectrum Available Market using a 30 minute grid in Appendix B of the Fourth Report

¹ *Public Notice Media Bureau Announces FM Translator Auction 83 Filing Window and Filing Procedures*, DA 13-283, released February 26, 2013. (Singleton PN)

and Order.² The required showing is identified as Test C, in Attachment B to the Singleton Window PN.

This facility is in not with 39 kilometers of any other Appendix A Market. It is not within any out-of-grid Top 50 Spectrum Limited Market.

Translator Height Above Average Terrain and Distance to Contour

The proposed translator facilities Height Above Average Terrain for the 12 radials used for translators is 312.7 meters. The corresponding distance to the 60 dBu F(50,50) contour is 10.324 kilometers, using the FM Curves utility on the Audio Division website. This translator falls in the middle classification for separation requirements in 47 C.F.R. §73.807(d)(1). The required separation for co-channel operation is 32 kilometers. The required separation for first adjacent channels is 21 kilometers, and the required separation distance for second adjacent channels is 14 kilometers.

Preclusion Study Description

Figure 1 shows the relationship of the proposed facilities to the Johnson City market grid. This facility as proposed in the short form filing is plotted with its Application ID, 623888.A. The Tech Box 60 dBu F(50,50) contour (dashed blue line) is shown. The proposed modified facilities are identified as 623888m. The proposed 60 dBu F(50,50) contour is shown as a solid red line. The protected contour for primary station WZJS (FM) is shown as a solid green line.

² *In the Matter of Creation of a Low Power Radio Service, Amendment of Service and Eligibility Rules for FM Broadcast Translator Stations, Fourth Report and Order and Third Order on Reconsideration*, FCC 12-19, released March 19, 2012.

A black line shows the 32 kilometer radius circle where the proposed translator facilities could preclude a co-channel LPFM opportunity. The 32 kilometer co-channel preclusion circle does not reach the market grid. The proposed facility does not preclude any identified points in the Johnson City market.

Source of Data

Transmitter location, effective radiated power, directional antenna pattern, and elevation data are extracted from the Commission's CDBS. All contours for existing and proposed facilities are calculated using height above average terrain calculated at one degree horizontal increments.

The contours were evaluated using terrain extracted from the V-Soft Communications NED 03 terrain database. The NED 03 database is derived from the USGS National Elevation Data 30 meter terrain database.

