WZTD-LD Application for Construction Permit for Displacement Facility

April 30, 2018

Engineering Exhibit

The purpose of this application is to request authority to modify the existing license (FCC file number BLDTL-20121009ACA) of WZTD-LD, Channel 45, Richmond, VA, Facility ID 68490, licensed to NBC Telemundo License LLC. WZTD-LD is being displaced because its current channel 45 is not in the post-repack TV band.

This application specifies the same antenna site and the same antenna height of 260 meters AMSL as currently authorized but requests operation on channel 34 with a different antenna and antenna pattern.

A TVStudy 2.2.4 analysis based on the April 30, 2018 LMS database using the default 1 km cell size and 1 km terrain profile point spacing for LPTV interference evaluation with the proposed facility at 15 kW effective radiated power (ERP) and full service emission mask showed the maximum amount of new interference to any existing full power or Class A facility, any authorized post-auction full power or Class A facility, and any pending full power of Class A application was under 0.5%. The analysis also showed the maximum amount of new interference to any existing low power or TV translator facility, any authorized low power or TV translator facility, and any pending low power or TV translator application (as of 4/30/2018) was under 2.0%.

Antenna System

The proposed facility will use a Dielectric TLP-12C/VP directional antenna with elliptical polarization, 1.7 degrees of electrical beam tilt, and no mechanical beam tilt. The main beam azimuth pattern is entered in the Directional Antenna Relative Field Values section of "Antenna Technical Data" in Schedule A. The "Elevation Radiation Pattern" question "Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt?" was answered "Yes" solely for the purpose of uploading the elevation pattern data to allow a more accurate representation of the proposed facility's coverage and interference. The elliptical polarization proposed has a maximum ERP of 15 kW horizontally polarized and a maximum ERP of 7.5 kW vertically polarized.

Environmental Statement

The requested facility will be side mounted in place of the existing antenna on the existing tower. The tower height will not be increased.

RF power density from the facility was calculated using the procedures in FCC Office of Engineering and Technology Bulletin 65. The maximum power density on the ground around the site, allowing for 2 meter person height and 10 meter building height, is calculated to be 0.000294 mW/cm^2 or 0.07% of the FCC maximum permissible exposure level of 0.395 mW/cm^2 at 593 MHz for an uncontrolled environment.

At full power, RF power density from the proposed facility is calculated to be below occupational exposure levels in the main beam of the antenna at distances greater than 19.7 meters. There are no towers within this distance, but there are two towers within the 44 meter distance where exposure levels in the main beam are above the uncontrolled environment exposure level. WZTD-LD will coordinate with other users at the site and reduce power or shut off as required to protect workers on this and other towers at the site from RF exposure above the limits specified in FCC rule §1.1310. Access to the tower is restricted by locked gates.

Broadcast Facility

Compliance with Section 74.709

The channel 34 proposed for WZTD-LD is not allocated for land-mobile operation in any market.

Compliance with Section 74.793(e) and Section 74.793(f)

A TVStudy 2.2.4 analysis using the default 1 km cell size and 1 km terrain profile point spacing for LPTV interference evaluation and the facility proposed in this application showed the maximum amount of new interference created to any existing full power facility, any authorized post-auction full power facility, and any pending full power applications in the LMS database dated April 30, 2018 was under 0.5%.

Compliance with Section 74.793(g)

A TVStudy 2.2.4 analysis using the default 1 km cell size and 1 km terrain profile point spacing for LPTV interference evaluation and the facility proposed in this application showed no new interference above 0.5% to any currently authorized Class A TV facility or to any pending Class A TV station application in the LMS database dated April 30, 2018.

Compliance with Section 74.793(h)

A TVStudy 2.2.4 analysis using the default 1 km cell size and 1 km terrain profile point spacing for LPTV interference evaluation and the facility proposed in this application showed no new interference above 2.0% to any authorized low power TV, TV translator, digital low power TV, or digital TV translator facility in the LMS database dated April 30, 2018. The proposed facility was not mutually exclusive with any low power TV, TV translator, digital low power TV, or digital TV translator application in the LMS database dated April 30, 2018

Exhibit prepared by:
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