K18DL-D Application for CP for Minor Modification August 5, 2021

Purpose of Application

This application is being filed to request a construction permit for minor modification of Cache County's license K18DL-D, Facility ID 36605, Logan UT. The application corrects the antenna location, antenna support structure, antenna make and model, antenna pattern and effective radiated power (ERP) to match the facility as actually constructed. An application for engineering special temporary authority (STA) to operate with the facilities as constructed is being filed with this application.

Modifications requested

The application requests modification of the license to reflect the discrepancies between the facility as licensed and constructed facilities as described below.

The licensed antenna location, 41° 33' 3.7" N, 111° 56' 10.7" W (NAD83) is approximately 0.06 kilometers and 99.6 degrees from the actual antenna location at 41° 33' 04.0" N, 111° 56' 13.1" W (NAD83). The change in location increases the site elevation from the licensed 2,167 meters to 2174.6 meters. The K18DL-D license shows the heights of the support structure and radiation center of the antenna above ground at 18.3 meters and 9.14 meters, respectively. The correct support structure height is 6.4 meters above ground with an antenna radiation center 5.0 meters above ground. The actual height of radiation center above mean sea level is 2179.6 meters compared to the 2176.14 meter height shown on the K18DL-D license.

The facility as constructed uses a Kathrein K72314 panel antenna (FCC antenna ID 1005030) rotated to 25 degrees from true north. This antenna has less gain (11 dBd) than the Scala PR-450CU antenna specified in the license. Transmitter output after the mask filter is 100 watts. After allowing for transmission line loss, the actual ERP is 1.21 kW, instead of the licensed ERP of 3.2 kW.

Environmental Statement

The antenna is located at an established communications site with other translators. No new construction is proposed.

At depression angles greater than or equal to 30 degrees, the ERP from the requested facility is less than 121 watts. At depression angles equal to or greater than 30 degrees from the antenna the power density, as calculated using the formulas in FCC Office of Engineering and Technology Bulletin 65, is below the occupational (controlled) environment limit of 1.657 mW/cm^2 at distances greater than 2.3 meters (7.55 feet) from the antenna and below the public (uncontrolled) environment limit of 0.331 mW/cm^2 at distances greater than 4.99 meters (16.4 feet) from the antenna.

In the main beam of the antenna the power density is below the occupational (controlled) environment limit of 1.657 mW/cm^2 at distances greater than 5.7 meters (18.7 feet) from the antenna and below the public (uncontrolled) environment limit of 0.331 mW/cm^2 at distances greater than 12.75 meters (41.9 feet) from the antenna.

The power density calculations assume a worst case relative field of 1.0 at all azimuths. The actual antenna is directional, with ERP dropping below 121 watts at azimuths plus or minus 60 degrees from the peak at 25 degrees from true north. The facility is not accessible to the public and is located on a private road accessible only after passing through two locked gates with appropriate signs warning of potential RF exposure.

The site is shared with other broadcasters and Cache County agrees to cooperate with other tenants to reduce or shut off power from K18DL-D as necessary to protect workers at the site.

Broadcast Facility

Compliance with Section 74.709

The K18DL-D Channel 18 is not allocated for land-mobile operation in this market. A TVStudy analysis found no land mobile station failures.

Compliance with Sections 74.793(e), 74.793(f), 74.793(g), and 74.793(h)

A TVStudy 2.2.5 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 authorized or applied for facility in the LMS database dated July 27, 2021 was under 0.5% for any DTV broadcast or digital Class A facility and under 2.0% for any digital low power TV or TV translator facility. A copy of the TVStudy tvixstudy.txt file is included in this application as a separate attachment.

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under the direction of and for:

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Cache County
August 5, 2021

K18DL-D Application for CP for Minor Modification August 4, 2021