KNBC Application for CP for Minor Modification of Licensed Facility

March 18, 2022

Engineering Exhibit

The purpose of this application is to request modification of the main license (file number BLCDT-20070820ACK) for KNBC, Los Angeles, CA, Facility ID 47906, licensed to NBC Telemundo License LLC.

KNBC is currently operating at reduced power under Engineering STA (LMS file number 0000186845) due to damage to its main antenna after the antenna's input assembly burned. This application proposes replacing that antenna with a new antenna with additional electrical beam tilt and increasing horizontally polarized effective radiated power (ERP) to 1,000 kW and vertically polarized ERP to 499.8 kW. The antenna height was not changed but the height above average terrain (HAAT) was increased to 1,005 meters from 991 meters to match the TVStudy HAAT calculation.

A TVStudy 2.2.5 analysis of the proposed facility using the horizontal plane antenna azimuth pattern of the mechanically tilted antenna and the default 2 km cell size and 1 km terrain profile spacing showed the maximum amount of new interference created to any application or authorized facility in the LMS database dated March 16, 2022 was under 0.5%. Non-U.S. stations were included in the study and none of these received any interference from the proposed facility. TVStudy showed 1.07% received interference to the proposed KNBC facility from adjacent channel KTLA LMS File Number 0000166994 (0.82%) and co-channel KSKT-CD LMS File Number 0000068950 (0.25%). To the extent necessary, KNBC agrees to accept interference from the specified authorizations.

Antenna System

The proposed facility uses a Dielectric TFU-22JTH/VP-R O6 top mounted slot antenna with a combination of 1.5 degrees electrical beam tilt and 1.0 degrees mechanical beam tilt at 220 degrees.

Tabular and plotted antenna data, including depression angle calculations to the radio horizon required by FCC rules Section 73.625, is attached. The height above average terrain data used for the depression angle calculations was generated using the TVStudy 2.2.5 ptelev utility with 360 radials selected and the default terrain database.

The antenna will be elliptically polarized. As shown in the main beam azimuth plots in the attached 73.625(c) data, the vertically polarized effective radiated power does not exceed the horizontally polarized effective radiated power in any direction.

Environmental Statement

The requested facility will replace an existing antenna on an existing tower at a site shared by other broadcasters. No new tower construction or increase in height is required for this application.

RF power density from the facility using combined horizontal and vertically polarized ERP was calculated using the procedures described in FCC Office of Engineering and Technology Bulletin 65. The maximum calculated RF power density on the ground from the proposed facility, in any location around the tower, after including an additional 2 meters for the height of a person and an additional 20 meters to allow for terrain variation and building roof tops is 0.01686 mW/cm^2 or 4.18% of the public exposure limit for an uncontrolled environment as specified in FCC rule §1.1310. This worst case analysis included the additional power from the 1.0 degree of antenna mechanical down tilt in all areas around the tower even though the tilt is present in only one direction where the elevation drops significantly. The tower itself is protected by fences and gate and is not accessible to the general public.

Environmental Statement (continued)
RF exposure in the main beam of the antenna is calculated to drop below the maximum permissible occupational limit for a controlled environment at horizontal distances greater than 158 meters from the tower and below the public exposure limit at distances greater than 353 meters from the tower. Power will be reduced or shut off as required to protect workers on this tower or adjacent towers from RF exposure above the limits specified in FCC rule §1.1310.

Broadcast Facility
Compliance with 73.616:
A study using TVStudy 2.2.5 and the FCC LMS database dated 03/16/2022 and the horizontal plane antenna pattern showed the proposed facility complies with the interference requirements of Section 73.616 with regards to any applications or authorized facilities when studied with the default settings of 2 km cell size and 1 km terrain profile point spacing. A copy of the TVStudy results is attached as separate exhibit “tvixstudy.txt”.

Compliance with 73.622(i):
The proposed facility will operate on the channel currently assigned to KNBC. The proposed KNBC facility has a predicted service area of 41530.5 square kilometers, which is less than the service area of 64234.9 square kilometers for KWHY-TV (Facility ID 26231) in the same Los Angeles DMA and thus complies with the Section 73.622(f)(5) limit on permissible maximized coverage area and the ERP and HAAT limits in 73.622(f)(8) do not apply.

Compliance with 73.623(e):
Not applicable. This application does not change the assigned channel or location of the authorized station.

Compliance with 73.625:
The proposed facility will place a 48 dBµv/m principle community contour over Los Angeles CA, the community of license. See “KNBC Proposed Coverage” map, attached.

Compliance with 73.1030:
A TVStudy analysis did not show a requirement for notification or coordination with any facility listed in Section 73.1030.

Section 73.1650 Considerations:
The proposed facility is 190.2 km from the Mexican border and within the coordination distance to the border. TVStudy 2.2.5 showed no interference of any amount to any Mexican authorization or allocation from the proposed operation. See the separate attachment “tvixstudy.txt”

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