

TECHNICAL SUMMARY
AMENDMENT TO
APPLICATION FOR CONSTRUCTION PERMIT
FCC FILE NO. BPCDT-20090713ACO
TV STATION KCWX
FREDERICKSBURG, TEXAS
CHANNEL 5 45 KW (ND) 412 m

1. This application is an amendment to the pending application (BPCDT-20090713ACO) for KCWX on channel 5 at Fredericksburg, Texas and is being filed in response to the FCC's Public Notice which temporarily lifted the freeze on the filing of minor modification applications that expand the contour or full power and Class A TV stations.¹ The application proposes to increase the KCWX ERP from 23.7 kW to 45 kW with no other changes including no change in the overall structure height of the existing tower (ASRN 1209887). A waiver of Section 73.622(f)(6) is requested with justification provided below.

2. Waiver of Section 73.622(f)(6): It is proposed to increase the KCWX ERP from the current license value of 23.7 kW to 45 kW, a value above the FCC's normal limit for Low VHF stations in Zone 2 with an authorized antenna HAAT of 412 meters. Although the proposed ERP (45 kW) exceeds the value normally permitted for a Low VHF DTV station in Zone 2 with an antenna HAAT of 412 meters, it does not exceed the absolute Low VHF ERP limit (45 kW) regardless of antenna HAAT. Therefore, a waiver of section 73.622(f)(6) is respectfully requested. The following supports the waiver request.

The proposed ERP increase is made in an effort to rectify coverage deficiencies in the KCWX core service area. Station KCWX is a CW affiliate station. After its conversion to digital on Low VHF channel 5, station KCWX received numerous reception complaints from viewers. As the FCC is aware, stations converting their pre-transition analog operation to post transition digital operation on low VHF channels experienced complaints from off-the-air viewers who were able to receive the pre-transition analog signal, but were unable to receive the post transition digital signal. This is particularly a concern for viewers using indoor receiving antennas. The longer wavelength of Low VHF signals is a handicap for

¹ *Media Bureau Temporarily Lifts the Freeze on the Filing of Minor Modification Applications That Expand the Contour of Full Power and Class A Television Stations from November 28 Through December 7, 2017*, Public Notice, DA 17-1086 (released November 6, 2017).

penetration of buildings and reception with typical indoor antennas geared for smaller wavelength signals (such as UHF). The reception of analog signals is more forgiving in that a picture and audio may be available, even though it may be somewhat degraded. Digital reception exhibits the cliff effect where the reception is either perfect or non-existent. The FCC is well aware of the coverage issues as related to Low VHF DTV stations (see WVPI-DT, Ch. 6, Philadelphia, PA, WHBF-TV, Ch. 4, Rock Island, IL, KCAU-TV, Ch. 9, Sioux City, IA & WRGB-DT, Ch. 6, Schenectady, NY). Although this ERP increase is not expected to resolve all of the viewer reception complaints, the higher power is expected to help alleviate some of them.

In support of the waiver, the station hereby submits a report setting forth field measurements taken before and after the requested ERP increase was implemented pursuant to STA, BDSTA-20100813BFX. As indicated, there was a large improvement in signal-to-noise ratio (SNR) at all sites. The SNR improvement was necessary to decode the digital signal. See signal reception report attached.

Furthermore, as noted above, KCWX-DT operates on a Low VHF frequency which is undesirable for DTV operation. It is also an outlier station located in the Austin, TX DMA market (#48). Grant of the proposed operation will permit improvement of reception of its Low VHF DTV service to its core coverage area, as detailed above.

Figure 1 is a coverage map showing the present and proposed KCWX-DT 28 dBu noise limited contours. The estimated population (2010 us census) within the present & proposed 28 dBu contours are 3,945,379 people & 4,110,232 people, respectively. Therefore, grant of the proposal will result in a gain in 28 dBu noise limited service to 164,853 persons.

3. As demonstrated in the attached *TVStudy* analysis exhibit, the proposal complies with the FCC's interference protection requirements based on a cell size of 2.0 km and profile resolution of 1.0 points/km.

4. Mexican Coordination: The proposed transmitter site is located within the US-Mexican border coordination zone (229.1 km from nearest point on Mexico border). However, it is understood that the proposed operation has already been coordinated with Mexico in association with KCWX's STA operation (BDSTA-20100813BFX). Hence, further coordination with Mexico does appear necessary.

5. RFR Compliance: The proposed facilities were evaluated in terms of potential radiofrequency radiation (RFR) exposure at ground level to workers and the general public. The radiation center for the proposed DTV antenna will be located 336 meters above ground level. The total DTV ERP is 45 kW (horizontal polarization). A greater than expected vertical plane relative field value of 0.5 is presumed for the antenna's downward radiation (for angles below 60 degrees downward). The calculated power density at a point 2 meters above ground level is 3.37 uW/cm^2 which is 1.7% of the FCC's recommended limit of 200 uW/cm^2 for channel 5 for an uncontrolled environment. Therefore, based on the responsibility threshold of 5%, the proposal will comply with the RF emission rules.

Access to the transmitting site is restricted and appropriately marked with RFR warning signs. Also, a formal RFR protection protocol is in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measures will be taken to assure worker safety with respect to RFR exposure. Such measures include limiting the exposure time, wearing protective clothing, reducing power to an acceptable level or termination of transmitter output power all together until workers leave the restricted area.