

TECHNICAL EXHIBIT
IN SUPPORT OF LICENSE RENEWAL
RADIO STATION KWRK(FM) (FACILITY ID 66147)
WINDOW ROCK, ARIZONA
CH 241C1 100 KW 178 M

Technical Narrative

This technical statement was prepared in support of the license renewal application for station KWRK(FM) at Window Rock, Arizona. Specifically, the purpose of this technical statement is to provide information demonstrating that the current operation of KWRK complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments.

Station KWRK is currently licensed to operate on channel 241C1 with an effective radiated power (ERP) of 100 kilowatts (kW) and an antenna height above average terrain (HAAT) of 178 meters.¹ The antenna radiation center height is 72 meters (236 feet) above ground level.

Ground Level Radiofrequency Electromagnetic Field Exposure

The existing KWRK facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the existing antenna is located 72 meters above ground level. The total ERP (horizontal & vertical polarizations) is 200 kW. The calculated power density at a point 2 meters above ground level for an assumed relative value of 0.22 (see Figure 1) is 0.066 mW/cm². This is 33% of the FCC's recommended limit of 0.2 mW/cm² for FM frequencies for an "uncontrolled" environment.

It is noted that the CDBS indicates that LPTV station K44BB (BLTT-19871001HH) is licensed to operate from a transmitter site at the same coordinates as KWRK. The KWRK applicant, Mr. Ernie Manuelito, states that the K44BB transmitter site is located

¹ See FCC File Number: BLH-19960911KD.

at least 100 yards (90 meters) to the east/southeast of the KWRK tower and that there are no LPTV stations operating from the KWRK site. The CDBS database indicates that K44BB operates from a shorter tower at a lower ground elevation than the KWRK tower, thus confirming the claim that it operates from a different transmitter site than KWRK. K44BB uses a highly directional antenna (antenna id 16340), oriented with its major lobe to the north (away from the KWRK site). Based on this information, the resulting calculated power density at the KWRK site from K44BB (assuming a relative field of 0.05 for the antenna side null) is less than 0.0001 mW/cm^2 . Even assuming a worst case maximum relative field value of 1.0 for K44BB at a location 90 meters away, its contribution at the KWRK site is calculated to be 0.008 mW/cm^2 or less than 2% of the "uncontrolled" limit. This would mean the worst-case combined power density at the KWRK site is below 35% of the "uncontrolled" limit. Thus it is believe that the existing KWRK operation is in compliance with the FCC's recommended RFR limit.

Access to the transmitting site is be restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down.



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Figure 1

Sidemounts
Spacing: 1 Wavelength
8 Bay No Beam Tilt No Null Fill

