

**MINOR CHANGE APPLICATION/  
AUXILIARY FM ANTENNA SYSTEM  
US STATIONS, LLC  
KQUS-FM RADIO STATION  
CH 248C1 - 97.5 MHZ - 0.90 KW  
HOT SPRINGS, ARKANSAS  
February 2012**

**EXHIBIT B**

**Radio Frequency Assessment**

The proposed KQUS-FM auxiliary facility is co-located with another FM station and a TV station. Therefore, the worksheets associated with FCC Form 301 could not be used to certify compliance with the Commissions RF exposure limits. A study has been made to determine whether this proposal is in compliance with 47 C.F.R. §1.1307 of the Commission's rules and with OET Bulletin #65, dated August 1997 ("Bulletin"), regarding human exposure to radio frequency radiation in the vicinity of broadcast towers. This study considers all nearby stations, specifically the co-located KHTO, K204DI<sup>1</sup> and KTVV-LD<sup>2</sup>, and utilizes the appropriate formulas contained in the OET Bulletin.<sup>3</sup>

The KQUS-FM auxiliary antenna system will be mounted with its center of radiation 21.9 meters (27.0 feet) above ground at the tower location and will operate with an effective radiated power of 0.9 kilowatt in the horizontal and vertical planes (circularly polarized). At 2.0 meters above the ground at the base of the tower, the height of an average person, the KQUS-FM

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- 1) The coordinates for K204DI place the antenna on another structure. It is, however, considered co-located for the purposes of this RF analysis.
  - 2) The KQUS-FM main antenna is co-located with the proposed KQUS-FM auxiliary. As the main and auxiliary will not operate at the same time, the contribution of the KQUS-FM main is not considered herein.
  - 3) The contributions of the FM facilities were calculated using the FMModel program. A single bay EPA dipole antenna was used for calculation purposes. In cases where the number of bays of the antenna was known, this data was used in the FMModel program.

auxiliary antenna system contributes  $0.0913 \text{ mw/cm}^2$ .<sup>4</sup> Based on exposure limitations for a controlled environment, 9.1% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 45.7% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower.

The authorized KHTO antenna system is mounted with its center of radiation 27.0 meters (88.6 feet) above ground at the tower location and operates with an effective radiated power of 0.94 kilowatt in the horizontal and vertical planes (circularly polarized). The KHTO antenna system is a rototiller style, two bay full wavelength antenna from Electronics Research, Inc. (FCC/EPA Type #3). At 2.0 meters above the ground at the base of the tower, the height of an average person, the KHTO antenna system contributes  $0.0144 \text{ mw/cm}^2$ .<sup>5</sup> Based on exposure limitations for a controlled environment, 1.4% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 7.2% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower.

The authorized K204DI antenna system is mounted with its center of radiation 34.0 meters (111.5 feet) above ground at the tower location and operates with an effective radiated power of 0.028 kilowatts in the horizontal and vertical planes (circularly polarized). At 2.0 meters above the ground at the base of the tower, the height of an average person, the K204DI antenna system contributes  $0.0011 \text{ mw/cm}^2$ .<sup>6</sup> Based on exposure limitations for a controlled

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- 4) This level of field occurs at 6.0 meters out from the base of the tower and is considered worst case.
  - 5) This level of field occurs at 17.0 meters out from the base of the tower and is considered worst case.
  - 6) This level of field occurs at 9.0 meters out from the base of the tower and is considered worst case.

environment, 0.1% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 0.6% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower.

The authorized KTVV-LD digital Channel 18 antenna system is to be mounted with its center of radiation 42.0 meters (137.8 feet) above ground at the tower location and operate with an effective radiated power of 5.2 kilowatts in the horizontal plane. As denoted in OET Bulletin #65, Supplement A, Page 31, the typical UHF antenna system has a downward radiated field of 0.1. As such, the calculations of the KTVV-LD antenna are based on a power of 0.052 kilowatt. At 2.0 meters above the ground at the base of the tower, the height of an average person, the KTVV-LD antenna system contributes  $0.0004 \text{ mw/cm}^2$ . Based on exposure limitations for a controlled environment, <0.1% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 0.1% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower.

Combining the contributions of KQUS-FM auxiliary, KHTO, K204DI, KTVV-LD, a total of 53.6% of the limit for an uncontrolled environment is reached at 2.0 meters above the ground at the base of the tower. Since this contribution level is less than the ANSI limits, it is believed that the KQUS-FM auxiliary is in compliance with the radio frequency radiation exposure limits, as required by the Federal Communications Commission. USS will also insure that warning signs have been posted in the vicinity of the tower warning of potential radio frequency radiation hazards at the site. In addition, USS will reduce the power of either facility or cease operation in cooperation and coordination with other tower users, as necessary, to protect persons having access to the site, tower, or antenna from radio frequency radiation in excess of FCC guidelines.