

MINOR CHANGE APPLICATION
NEW AUXILIARY FM ANTENNA SYSTEM
PMB BROADCASTING, LLC
W KCN RADIO STATION
CH 257C2 - 99.3 MHZ - 1.1 KW
FORT BENNING SOUTH, GEORGIA
October 2011

EXHIBIT B

Radio Frequency Assessment

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 FM stations W KCN (main)¹, WCGQ, WFXE, FM translators W295AY and W299AX, and television stations WYBU-CD, W29EA, and WQMB-LD², and utilizes the appropriate formulas contained in the OET Bulletin.³

The proposed W KCN auxiliary antenna system will be mounted with its center of radiation 67.1 meters (220.0 feet) above ground at the tower location and will operate with an effective radiated power of 1.1 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 W KCN auxiliary antenna system will contribute 0.0104 mw/cm².⁴ Based on

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- 1) While it is unlikely that the W KCN main and auxiliary would be on at the same time, they are both considered for a worst case contribution.
 - 2) Both WCGQ and WQMB-LD are located on a tower nearby, but are considered co-located for the purposes of this analysis.
 - 3) The contributions of the FM facilities were calculated using the FMModel program. A single bay EPA dipole antenna was used for calculation purposes, unless otherwise noted.
 - 4) This level of field occurs at 18.0 meters out from the base of the tower and is considered worst case.

exposure limitations for a controlled environment, 1.0% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 5.2% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower.

The authorized WKC� antenna system is mounted with its center of radiation 86.9 meters (285.0 feet) above ground at the tower location and operates with an effective radiated power of 29.0 kilowatts in the horizontal and vertical planes (circularly polarized). The WKC� antenna is an Electronics Research rototiller style antenna system (FCC/EPA Type #3).⁵ At 2.0 meters above the ground at the base of the tower, the height of an average person, the WKC� antenna system contributes 0.0598 mw/cm².⁶ Based on exposure limitations for a controlled environment, 6.0% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 29.9% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower.

The WCGQ antenna system is mounted with its center of radiation 228.0 meters (748.0 feet) above ground at the tower location and operates with an effective radiated power of 100.00 kilowatts in the horizontal and vertical planes (circularly polarized). The WCGQ antenna is a Continental/ERI rototiller style eight bay full wavelength antenna system (FCC/EPA Type #3). At 2.0 meters above the ground at the base of the tower, the height of an average person, the WCGQ antenna system contributes 0.0076 mw/cm².⁷ Based on exposure limitations for a controlled environment, 0.8% of the allowable limit is reached at 2.0 meters above the ground at

5) A single bay antenna was used for worst case calculations.

6) This level of field occurs at 85.0 meters out from the base of the tower and is considered worst case.

7) This level of field occurs at 61.0 meters out from the base of the tower and is considered worst case.

the base of the tower. For uncontrolled environments, 3.8% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower.

The authorized WFXE⁸ antenna system is to be mounted with its center of radiation 84.0 meters (275.6 feet) above ground at the tower location and will operate with an effective radiated power of 2.3 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 WFXE antenna system will contribute 0.0138 mw/cm².⁹ 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, 6.9% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower.

The W295AY antenna system is mounted with its center of radiation 41.0 meters (134.5 feet) above ground at the tower location and operates with an effective radiated power of 0.250 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 W295AY antenna system contributes 0.0066 mw/cm².¹⁰ Based on exposure limitations for a controlled environment, 0.7% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 3.3% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower.

8) WFXE is currently operating under at STA at this location. The contribution of the STA facility is less than the contribution of the WFXE permit. As such, the WFXE permit was used as worst case.

9) This level of field occurs at 22.0 meters out from the base of the tower and is considered worst case.

10) This level of field occurs at 11.0 meters out from the base of the tower and is considered worst case.

The W299AX antenna system will be mounted with its center of radiation 38.0 meters (124.7 feet) above ground at the tower location and will operate with an effective radiated power of 0.01 kilowatt in the horizontal and vertical planes (circularly polarized).¹¹ At 2.0 meters above the ground at the base of the tower, the height of an average person, the W299AX antenna system will contribute 0.0003 mw/cm².¹² 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, 0.2% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower.

The WYBU-CD Channel 16 digital antenna system is mounted with its center of radiation 101.2 meters (332.0 feet) above the ground at the existing tower location and operates with an effective radiated power of 15.0 kilowatts in the horizontal plane. At 2.0 meters above the ground at the base of the tower, the height of an average person, the WYBU-CD antenna system contributes 0.0204 mw/cm². Based on exposure limitations for a controlled environment, 1.3% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 6.3% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The authorized WQMB-LD Channel 36 digital antenna system is to be mounted with its center of radiation 67.0 meters (220.0 feet) above the ground at the existing tower location and will operate with an effective radiated power of 0.35 kilowatt in the horizontal plane. At 2.0

11) The licensed W299AX facility operates with the same power as the permit, with an antenna height significantly higher on the tower. Therefore, the permit was used as a worst case contributor.

12) This level of field occurs at 10.0 meters out from the base of the tower and is considered worst case.

meters above the ground at the base of the tower, the height of an average person, the WQMB-LD antenna system will contribute 0.0011 mw/cm^2 . Based on exposure limitations for a controlled environment, 0.1% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 0.3% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The authorized W29EA Channel 29 digital antenna system is to be mounted with its center of radiation 5.0 meters (16.0 feet) above the ground at the existing tower location and will operate with an effective radiated power of 0.006 kilowatt in the horizontal plane. At 2.0 meters above the ground at the base of the tower, the height of an average person, the W29EA antenna system will contribute 0.0089 mw/cm^2 . Based on exposure limitations for a controlled environment, 0.5% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 2.4% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

Combining the contributions of WKCN, WKCN main, WCGQ, WFXE, W295AY, W299AX, WYBU-CD, W29EA, and WQMB-LD, a total of 58.3% is reached at 2.0 meters above the ground at the base of the existing tower. Since this contribution level is less than the ANSI limits, it is believed the proposed WKCN auxiliary facility is in compliance with the radio frequency radiation exposure limits, as required by the Federal Communications Commission. PMB 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, PMB will reduce the power of

the 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.