

**MINOR CHANGE APPLICATION**  
**NEW AUXILIARY FM ANTENNA SYSTEM**  
**CUMULUS LICENSING LLC**  
**WKFR-FM RADIO STATION**  
**CH 277C1 - 103.3 MHZ - 3.4 KW**  
**BATTLE CREEK, MICHIGAN**  
**June 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 contributing stations, specifically WKFR-FM (main) and WCFG, and utilizes the appropriate formulas contained in the OET Bulletin.<sup>3</sup>

The proposed WKFR-FM auxiliary antenna system will be mounted with its center of radiation 95.1 meters (312.0 feet) above the ground at the tower location and will operate with an effective radiated power of 3.4 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 proposed WKFR-FM auxiliary antenna system will contribute 0.0158 mw/cm<sup>2</sup>.<sup>4</sup> Based on exposure limitations for a controlled environment, 1.6% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 7.9% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

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- 3) The contributions of the FM stations were calculated with the FMModel program. The EPA single bay dipole antenna was used for calculations unless otherwise noted.
- 4) This level occurs at 25.0 meters out from the base of the tower and is considered worst case.

The authorized WKFR-FM main antenna system is mounted with its center of radiation 135.0 meters (442.9 feet) above the ground at the tower location and operates with an effective radiated power of 50.0 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 authorized WKFR-FM main antenna system contributes  $0.1137 \text{ mw/cm}^2$ .<sup>5</sup> Based on exposure limitations for a controlled environment, 11.4% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 56.9% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The authorized WCFG antenna system is mounted with its center of radiation 95.0 meters (311.7 feet) above the ground at the tower location and operates with an effective radiated power of 0.7 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 WCFG antenna system contributes  $0.0033 \text{ mw/cm}^2$ .<sup>6</sup> Based on exposure limitations for a controlled environment, 0.3% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 1.7% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

Combining the contributions of the WKFR-FM auxiliary, the WKFR-FM main, and WCFG, a total of 66.5% of the level for uncontrolled environment is reached at 2.0 meters above the base of the tower. As this is below the limits defined by the Commission, the proposed

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5) This level occurs at 36.0 meters out from the base of the tower and is considered worst case.

6) This level occurs at 25.0 meters out from the base of the tower and is considered worst case.

WKFR-FM auxiliary facility is believed to be in compliance with the radio frequency radiation exposure limits, as required by the Federal Communications Commission. Further, Cumulus has posted warning signs in the vicinity of the tower warning of potential radio frequency radiation hazards at the site. In addition, Cumulus 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.