

**MINOR CHANGE APPLICATION**  
**COMMONWEALTH BROADCASTING, LLC**  
**WEXM RADIO STATION**  
**CH 291A - 106.1 MHZ - 1.7 KW**  
**POQUOSON, VIRGINIA**  
**November 2003**

**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 co-located AM station WNIS, and utilizes the appropriate formulas contained in the OET Bulletin.<sup>2</sup>

The proposed WEXM antenna system will be mounted with its center of radiation 150.9 meters (495.0 feet) above the ground at the tower location and operate with an effective radiated power of 1.7 kilowatts in the horizontal and vertical planes (circularly polarized). At two meters, the height of an average person above the ground, at the base of the tower, the WEXM antenna system will contribute 0.00308 mw.<sup>3</sup> Based on exposure limitations for a controlled environment, 0.31% of the allowable ANSI limit is reached at two meters above the ground at the base of the tower. For uncontrolled environments, 1.5% of the ANSI limit is reached at two meters above the ground at the base of the tower.

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- 2) 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.
  - 3) This level of contribution occurs at 40 meters out from the tower and is considered worst case.

The co-located AM station WNIS operates with a nominal power of 5.0 kilowatts on a frequency of 790 kHz, utilizing a 142.3° tower.<sup>4</sup> A fence is installed a minimum distance of 3.35 meters (11.0 feet) from the base of the tower. By reference to Figure 3, OET Bulletin #65, a 5.0 kilowatt AM facility would deliver 141.4 V/m and 0.294 A/m at the fence perimeter. Based on the controlled and uncontrolled limits (which are the same for AM stations on 790 kHz), the WNIS antenna system contributes 23.0% of the electric field limit and 18.0% of the magnetic field limit. Since the electric field contribution is higher, it is considered worst case for WNIS.

Combining the contributions of WEXM and WNIS, a total of 24.5% of the uncontrolled environment is reached at two meters above the base of the tower at the fenced perimeter. Since this level for uncontrolled environments is below the 100% limit defined by the Commission, the proposed WEXM facility is believed to be in compliance with the radio frequency radiation exposure limits as required by the Federal Communications Commission. Further, Commonwealth Broadcasting LLC (“CBL”) will post warning signs in the vicinity of the tower warning of potential radio frequency radiation hazards at the site. In addition, CBL will reduce the power of the proposed facility or cease operation, in cooperation and coordination with the 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. Based on the above factors, this proposal is categorically excluded from environmental processing pursuant to §1.1306 of the Commission’s rules.

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4) WNIS operates a four directional array. All four towers are the same height. While each tower does not radiate the full 5.0 kilowatts of power, it was assumed to for a worst case analysis. Each AM tower is similarly fenced and has the appropriate signs.