

**MINOR CHANGE APPLICATION**  
**WILLIAMSBURG'S RADIO STATION INC.**  
**NEW FM TRANSLATOR STATION**  
**CH 228D - 93.5 MHz - 0.1 KW**  
**WILLIAMSBURG, VIRGINIA**  
**December 2017**

**EXHIBIT C**

**Radio Frequency Radiation Study**

This radio frequency radiation study is being conducted to determine whether this proposal is in compliance with OET Bulletin #65, dated August 1997, regarding human exposure to radio frequency radiation in the vicinity of broadcast towers. This study utilizes the appropriate formulas contained in the OET Bulletin.

The proposed new translator's antenna will be mounted with its center of radiation 110.0 meters (361 feet) above the ground at the tower location and will operate with an effective radiated power of 0.1 kilowatt in the vertical and horizontal planes (circularly polarized). The new translator will utilize a Shively 6812B-6-HW, FCC Type I, six bay half wavelength antenna. At 2.0 meters above the ground at the base on the tower, the proposed new translator's antenna will contribute  $0.000009 \text{ mw/cm}^2$ .<sup>1</sup> Based on exposure limitations for a controlled environment, less than 0.1% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, less than 1.0% of the ANSI limit is reached at 2.0 meters above the ground at the tower base.

Since this level for uncontrolled environments is below the 5.0% limit defined by the Commission in §1.1307(b)(3)(i) of the rules, the proposed new translator facility is believed to

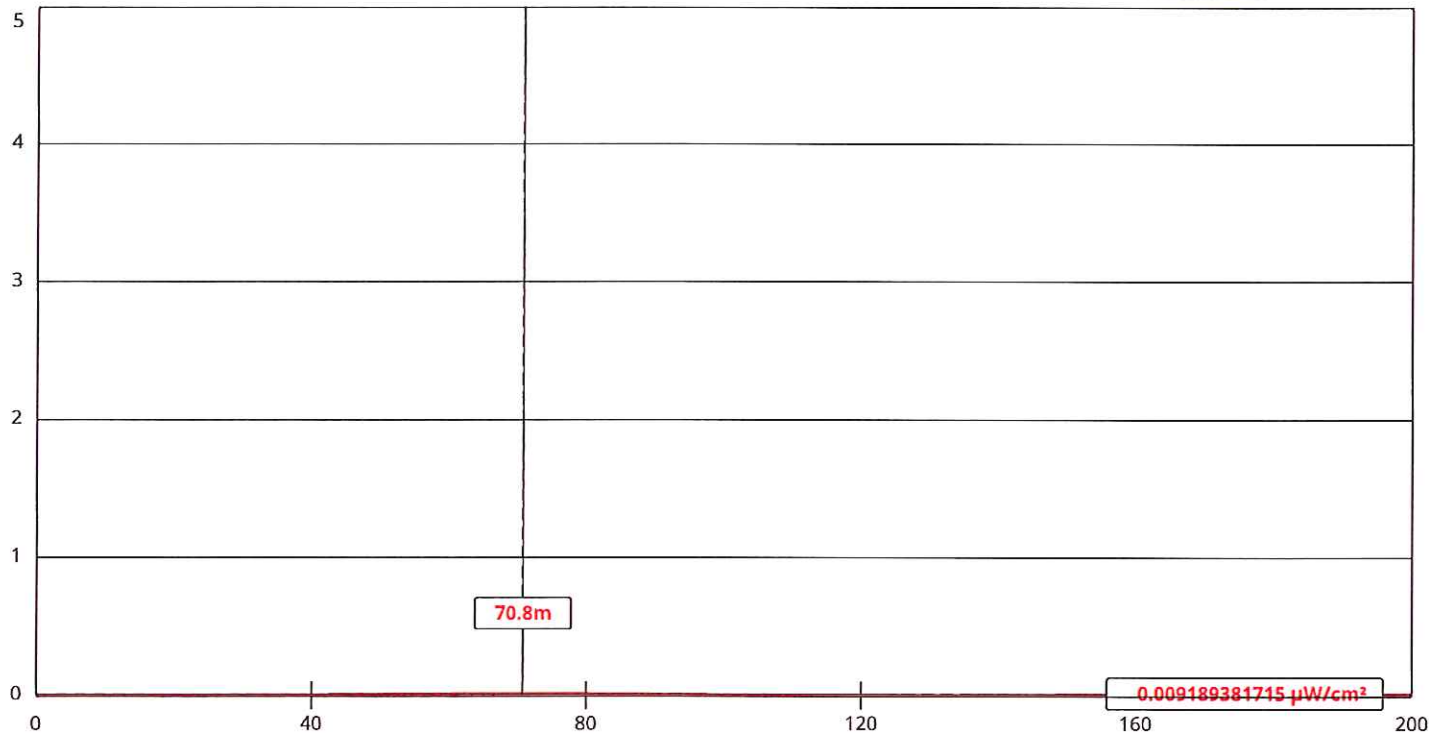
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1) This level of signal is delivered 46.6 meters from the base of the tower and is considered a worst case scenario.

be in compliance with the radio frequency radiation exposure limits, as by the Federal Communications Commission. Further, WRS will ensure warning signs are posted in the vicinity of the tower and at the gated access point warning of potential radio frequency radiation hazards at the site. In addition, WRS will reduce the power of the proposed 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.

# FM Model

The FM Model calculator determines the potential exposure from radiofrequency (RF) electromagnetic fields produced by FM broadcast station antennas at ground level. The FM Model software was originally developed by the FCC in 1997 as a standalone executable program and this improved version provides more precise predictions and runs via a JavaScript enabled web browser. The FM Model is originally based on measured data [published in 1985 by the EPA](#)



[View Tabular Results +](#)

Channel Selection	Channel 228 (93.5 MHz) ▼		
<a href="#">Antenna Type +</a>	EPA Type 1: Ring-and-Stub or "Other" ▼		
Height (m)	110	Distance (m)	200
ERP-H (W)	100	ERP-V (W)	100
Num of Elements	6	Element Spacing ( $\lambda$ )	.5
Num of Points	500	Apply	

Bureau/Office:

**EXHIBIT C1**  
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