

**MINOR CHANGE APPLICATION**  
**FAMILY WORSHIP CENTER CHURCH, INC.**  
**NEW FM TRANSLATOR STATION**  
**CH 295D - 106.9 MHZ - 0.17 KW**  
**BOWLING GREEN, OHIO**  
**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 79.2 meters (259.8 feet) above the ground at the tower location and will operate with an effective radiated power of 0.17 kilowatt in the vertical and horizontal planes (circularly polarized). The proposed facility will utilize an SWR FM1R/5-HWS, FCC Type 1, five 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  $0.000045 \text{ mw/cm}^2$ .<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

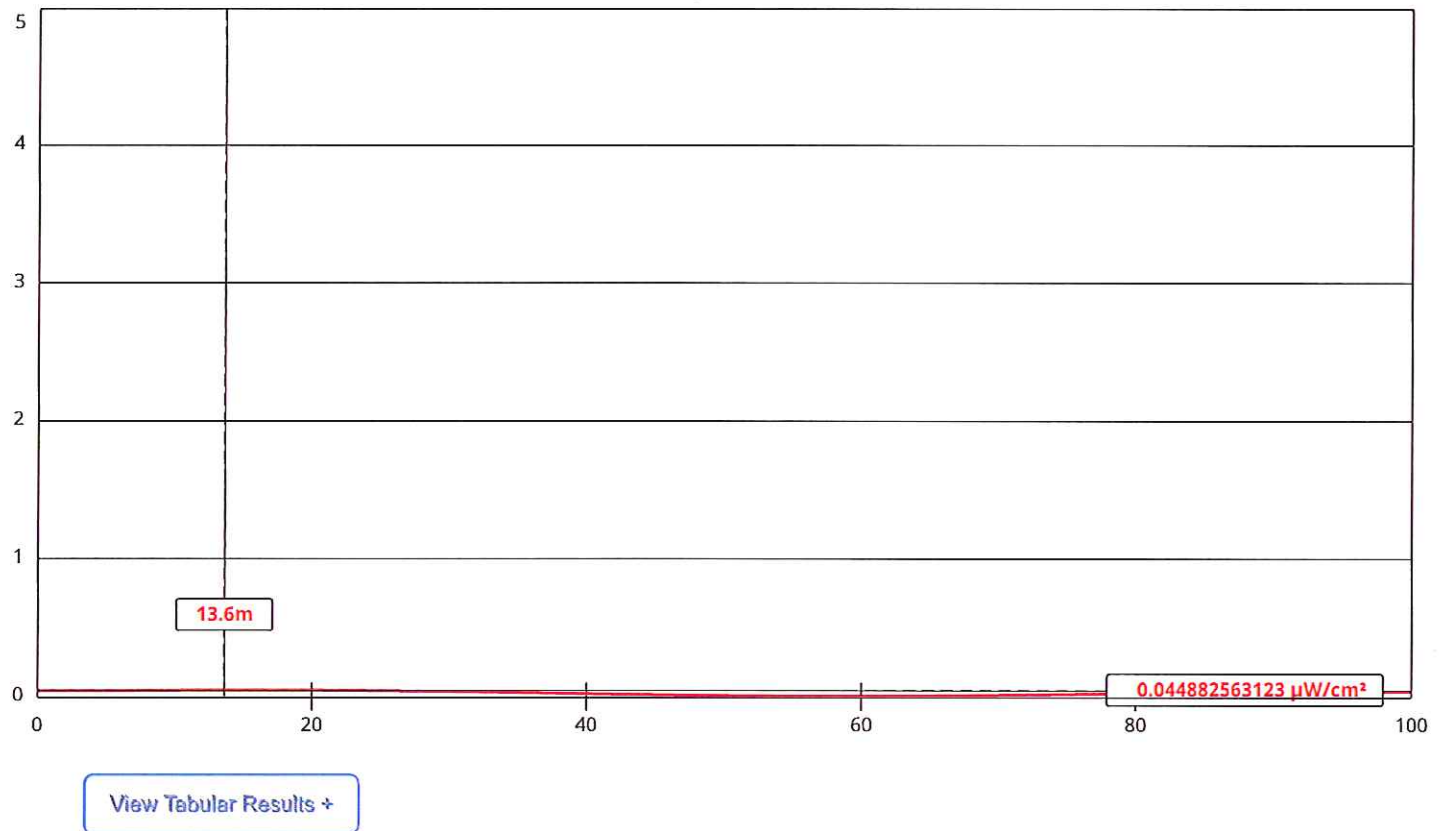
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1) This level of signal is delivered 13.6 meters from the base of the tower and is considered a worst case scenario.

be in compliance with the radio frequency radiation exposure limits, as required by the Federal Communications Commission. Further, Cumulus 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, Cumulus 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](#)



Channel Selection	Channel 295 (106.9 MHz) ▼		
<a href="#">Antenna Type +</a>	EPA Type 1: Ring-and-Stub or "Other" ▼		
Height (m)	79	Distance (m)	100
ERP-H (W)	170	ERP-V (W)	170
Num of Elements	5	Element Spacing (λ)	.5
Num of Points	500	Apply	

Bureau/Office:

**EXHIBIT C1**  
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