

**MINOR CHANGE APPLICATION**  
**CHRISTIAN MINISTRIES, INC.**  
**W215BQ FM TRANSLATOR STATION**  
**CH 216D - 91.1 MHZ - 0.01 KW (DA)**  
**ASCUTNEY, VERMONT**  
**March 2006**

**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 the co-located FM stations WHDQ, WNCH, WVPR and TV stations W17CI, WNNE-DT, WVTA, WVTA-DT and W62AT, and utilizes the appropriate formulas contained in the OET Bulletin.<sup>3</sup>

The proposed W215BQ antenna system is mounted with its center of radiation 30.0 meters (98.4 feet) above the ground at the tower location and will operate with an effective radiated power of 0.01 (10.0 watts) kilowatts in the horizontal and vertical planes (circularly polarized). At 2.0 meters, the height of an average person above the ground at the base of the tower, the proposed W215BQ antenna system will contribute 0.0005 mw/cm<sup>2</sup>.<sup>4</sup> 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.

- 
- 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 8.0 meters out from the base of the tower and is considered worst case.

The authorized WHDQ antenna system will be mounted with its center of radiation 92.0 meters (301.8 feet) above the ground at the existing tower location and operate with an effective radiated power of 1.6 kilowatts in the horizontal and vertical planes (circularly polarized). At 2.0 meters, the height of an average person above the ground at the base of the tower, the WHDQ antenna system will contribute 0.0079 mw/cm<sup>2</sup>. Based on exposure limitations for a controlled environment, 0.8% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 4.0% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The authorized WNCI antenna system will be mounted with its center of radiation 98.0 meters (321.5 feet) above the ground at the existing tower location and operate with an effective radiated power of 1.6 kilowatts in the horizontal and vertical planes (circularly polarized). At 2.0 meters, the height of an average person above the ground at the base of the tower, the WNCI antenna system will contribute 0.0070 mw/cm<sup>2</sup>. Based on exposure limitations for a controlled environment, 0.7% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 3.5% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The WVPR antenna system is mounted with its center of radiation 92.0 meters (301.8 feet) above the ground at the existing tower location and operates with an effective radiated

- 
- 5) This level of field occurs at 24.0 meters out from the base of the tower and is considered worst case.
  - 6) This level of field occurs at 26.0 meters out from the base of the tower and is considered worst case.

power of 1.8 kilowatts in the horizontal and vertical planes (circularly polarized).<sup>7</sup> At 2.0 meters, the height of an average person above the ground at the base of the tower, the WVPR antenna system contributes 0.0089 mw/cm<sup>2</sup>.<sup>7</sup> Based on exposure limitations for a controlled environment, 0.9% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 4.5% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The W17CI Channel 17 antenna system is mounted with its center of radiation 12.0 meters (39.4 feet) above the ground at the existing tower location and operate with an effective radiated power of 1.5 kilowatts in the horizontal plane. As denoted in OET Bulletin #65, Supplement A, Page 31, the typical UHF antenna system has a downward radiation field of 0.1. As such, the W17CI antenna system radio frequency radiation calculations were made based on an effective radiated power of 0.015 kilowatts. At 2.0 meters, the height of an average person above the ground at the base of the tower, the W17CI antenna system contributes 0.0031 mw/cm<sup>2</sup>. Based on exposure limitations for a controlled environment, 0.2% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 1.0% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

---

7) There is an outstanding permit for WVPR which raises the antenna system and lowers power. Since the licensed antenna is lower on the same tower, and operates with a high power level, it will be used as a worst case contributor.

8) This level of field occurs at 24.0 meters out from the base of the tower and is considered worst case.

The authorized WNNE-DT Channel 25 TV antenna system will be mounted with its center of radiation 81.0 meters (265.7 feet) above the ground at the existing tower location and operates with an effective radiated power of 117.0 kilowatts in the horizontal plane. As denoted in OET Bulletin #65, Supplement A, Page 31, the typical UHF antenna system has a downward radiation field of 0.1. As such, the WNNE-DT radio frequency radiation calculations were made based on an effective radiated power of 1.17 kilowatts. At 2.0 meters, the height of an average person above the ground at the base of the tower, the WNNE-DT antenna system will contribute 0.0025 mw/cm<sup>2</sup>. 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, 0.7% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The WVTA Channel 41 TV antenna system is mounted with its center of radiation 120.0 meters (393.7 feet) above the ground at the existing tower location and operates with an effective radiated power of 1,050 kilowatts in the horizontal plane. As denoted in OET Bulletin #65, Supplement A, Page 31, the typical UHF antenna system has a downward radiation field of 0.1. As such, the WVTA radio frequency radiation calculations were made based on an effective radiated power of 10.5 kilowatts. At 2.0 meters, the height of an average person above the ground at the base of the tower, the WVTA antenna system will contribute 0.0156 mw/cm<sup>2</sup>. Based on exposure limitations for a controlled environment, 0.7% of the allowable ANSI limit is

reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 3.7% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The authorized WVTA-DT Channel 24 TV antenna system will be mounted with its center of radiation 122.0 meters (400.3 feet) above the ground at the existing tower location and operate with an effective radiated power of 200.0 kilowatts in the horizontal plane. As denoted in OET Bulletin #65, Supplement A, Page 31, the typical UHF antenna system has a downward radiation field of 0.1. As such, the WVTA-DT radio frequency radiation calculations were made based on an effective radiated power of 2.0 kilowatts. At 2.0 meters, the height of an average person above the ground at the base of the tower, the WVTA-DT antenna system will contribute 0.0018 mw/cm<sup>2</sup>. 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, 0.5% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The W62AT Channel 62 antenna system is mounted with its center of radiation 117.0 meters (383.9 feet) above the ground at the existing tower location and operate with an effective radiated power of 1.91 kilowatts in the horizontal plane.<sup>9)</sup> As denoted in OET Bulletin #65, Supplement A, Page 31, the typical UHF antenna system has a downward radiation field of 0.1. As such, the W62AT antenna system radio frequency radiation calculations were made based on an effective radiated power of 0.0191 kilowatts. At 2.0 meters, the height of an average person

---

9) Due to the age of the W62AT license, its height above ground was determined by subtracting the site elevation (based on the ASR data) from the center of radiation above mean sea level.

above the ground at the base of the tower, the W62AT antenna system contributes  $<0.0001$   $\text{mw}/\text{cm}^2$ . 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,  $<0.1\%$  of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

Combining the contributions of W215BQ, WHDQ, WHCH, WVPR, W17CI, WNNE-DT, WVTA, WVTA-DT and W62AT, a total of less than 18.3% of the limit for uncontrolled environments is reached at two meters above the ground at the base of the tower. Since this level is far below the 100% limit defined by the Commission, the proposed W215BQ facility is believed to be in compliance with the radio frequency radiation exposure limits as required by the Federal Communications Commission. Further, CMI will post warning signs in the vicinity of the tower warning of potential radio frequency radiation hazards at the site. In addition, CMI 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.