

**MINOR CHANGE APPLICATION**  
**MADIFIDE, INC.**  
**WFID (FM) RADIO STATION**  
**CH 239B - 95.7 MHZ - 11.5 KW**  
**RIO PIEDRAS, PUERTO RICO**  
**August 2011**

**EXHIBIT A**

**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 WRXD, WVOZ-FM, WVQS-LD, WORO-DT, WRUA-DT, WMTJ-DT and W47DX-D, and utilizes the appropriate formulas contained in the OET Bulletin.<sup>1</sup>

The proposed WFID antenna system is to be mounted with its center of radiation 29.0 meters (95.1 feet) above the ground at the tower location and will operate with an effective radiated power of 11.5 kilowatts in the horizontal and vertical planes (circularly polarized). The WFID antenna is to be an Electronics Research rototiller style four bay full wavelength spaced antenna system (FCC/EPA Type 3). At 2.0 meters above the ground at the base of the tower, the height of an average person, the WFID antenna system will contribute 0.0914 mw/cm<sup>2</sup>.<sup>2</sup> Based on exposure limitations for a controlled environment, 9.1% of the allowable limit is reached at

- 
- 1) 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.
  - 2) This level of field occurs at 11.0 meters out from the base of the tower and is considered worst case.

2.0 meters above the ground at the base of the tower. For uncontrolled environments, 45.7% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The authorized WRXD antenna system is mounted with its center of radiation 55.0 meters (180.0 feet) above the ground at the tower location and operates with an effective radiated power of 11.5 kilowatts in the horizontal and vertical planes (circularly polarized). The WRXD antenna is to be a Jampro Double V style four bay half wavelength spaced antenna system (FCC/EPA Type 2). At 2.0 meters above the ground at the base of the tower, the height of an average person, the WRXD antenna system contributes  $0.0074 \text{ mw/cm}^2$ .<sup>3</sup> Based on exposure limitations for a controlled environment, 0.7% of the allowable 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 WVOZ-FM antenna system is mounted with its center of radiation 44.0 meters (144.0 feet) above the ground at the tower location and operates with an effective radiated power of 12.0 kilowatts in the horizontal and vertical planes (circularly polarized). The WVOZ-FM antenna is to be a Jampro Double V style four bay full wavelength spaced antenna system (FCC/EPA Type 2). At 2.0 meters above the ground at the base of the tower, the height of an average person, the WVOZ-FM antenna system contributes  $0.0605 \text{ mw/cm}^2$ .<sup>4</sup> Based on exposure limitations for a controlled environment, 6.1% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 30.3% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

- 
- 3) This level of field occurs at 198.0 meters out from the base of the tower and is considered worst case.
- 4) This level of field occurs at 16.0 meters out from the base of the tower and is considered worst case.

The authorized WVQS-LD Channel 50 digital antenna system is to be mounted with its center of radiation 51.0 meters (167.3 feet) above ground at the tower location and will operate with an effective radiated power of 15.0 kilowatts in the horizontal plane. As denoted in OET Bulletin #65, Supplement A, page 31, the typical UHF antenna system has a downward radiated field of 0.1. As such, the calculations of the WVQS-LD antenna are based on a power of 0.150 kilowatt. At 2.0 meters above the ground at the base of the tower, the height of an average person, the WVQS-LD antenna system will contribute 0.0008 mw/cm<sup>2</sup>. Based on exposure limitations for a controlled environment, <0.1% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 0.2% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower.

The authorized WORO-DT Channel 13 antenna system is mounted with its center of radiation 56.0 meters (183.7 feet) above ground at the tower location and operates with an effective radiated power of 38.0 kilowatts in the horizontal plane.<sup>5</sup> As denoted in OET Bulletin #65, Supplement A, page 29, the typical VHF antenna system has a downward radiated field of 0.2. As such, the calculations of the WORO-DT antenna are based on a power of 1.52 kilowatts. At 2.0 meters above the ground at the base of the tower, the height of an average person, the WORO-DT antenna system contributes 0.0070 mw/cm<sup>2</sup>. Based on exposure limitations for a controlled environment, 0.7% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 3.5% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower.

---

5) WORO-DT has a pre-transition license for Channel 33. However, WORO-DT has ceased operation on Channel 33 in favor of operation on Channel 13, as co-located TV station WRUA-DT is now operating on Channel 33. WORO-DT is presently operating with an STA at half authorized power on Channel 13. For the purposes of this review, the station is considered operating at its full authorized power.

The authorized WRUA-DT Channel 33 antenna system is mounted with its center of radiation 51.0 meters (167.3 feet) above ground at the tower location and operates with an effective radiated power of 50.0 kilowatts in the horizontal plane. As denoted in OET Bulletin #65, Supplement A, page 31, the typical UHF antenna system has a downward radiated field of 0.1. As such, the calculations of the WRUA-DT antenna are based on a power of 0.51 kilowatt. At 2.0 meters above the ground at the base of the tower, the height of an average person, the WRUA-DT antenna system contributes 0.0028 mw/cm<sup>2</sup>. Based on exposure limitations for a controlled environment, 0.1% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 0.7% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower.

The authorized WMTJ-DT Channel 16 antenna system is mounted with its center of radiation 53.2 meters (174.5 feet) above ground at the tower location and operates with an effective radiated power of 178.0 kilowatts in the horizontal plane.<sup>6</sup> As denoted in OET Bulletin #65, Supplement A, page 31, the typical UHF antenna system has a downward radiated field of 0.1. As such, the calculations of the WMTJ-DT antenna are based on a power of 1.78 kilowatts. At 2.0 meters above the ground at the base of the tower, the height of an average person, the WMTJ-DT antenna system contributes 0.0091 mw/cm<sup>2</sup>. Based on exposure limitations for a controlled environment, 0.6% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 2.8% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower.

---

6) WMTJ-DT has a license to operate at 140 kilowatts and an application for an increase in power to 178 kilowatts at the license site (with no other changes). Therefore, the application proposed power was used for a worst case contribution.

Combining the contributions for WFID, WRXD, WVOZ-FM, WVQS-LP, WORO-DT, WRUA-DT and WMTJ-DT, a total of 86.9% of the limit for uncontrolled environments is reached 2.0 meters above the ground at the base of the tower. Therefore, the proposed WFID facility is believed to be in compliance with the radio frequency radiation exposure limits, as required by the Federal Communications Commission. MI will also insure that warning signs have been posted in the vicinity of the tower warning of potential radio frequency radiation hazards at the site. In addition, MI 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.