

**MINOR CHANGE APPLICATION**  
**BREWER BROADCASTING CORP.**  
**W237AT FM TRANSLATOR STATION**  
**CH 237D - 95.3 MHZ - 0.25 KW**  
**RICHMOND, INDIANA**  
**March 2013**

**EXHIBIT D**

**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 utilizes the appropriate formulas contained in the OET Bulletin.<sup>1</sup>

The proposed W237AT antenna system will be mounted with its center of radiation 113.5 meters (372.5 feet) above the ground at the tower location and will operate with an effective radiated power of 0.25 kilowatt (250 watts) in the horizontal and vertical plane (circularly polarized). At 2.0 meters above the ground at the base of the tower, the height of an average person, the proposed W237AT antenna system will contribute 0.00081 mw/cm<sup>2</sup>.<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, <1.0% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The proposed W269BP antenna system will be mounted with its center of radiation 118.1 meters (387.5 feet) above the ground at the tower location and will operate with an effective

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- 1) The contributions of the FM stations were calculated with the FM Model program. The EPA single bay dipole antenna was used for calculations unless otherwise noted.
  - 2) This level occurs at 30.0 meters out from the base of the tower and is considered worst case.

radiated power of 0.25 kilowatt (250 watts) in the horizontal and vertical plane (circularly polarized). At 2.0 meters above the ground at the base of the tower, the height of an average person, the proposed W269BP antenna system will contribute  $0.00075 \text{ mw/cm}^2$ .<sup>3</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, <1.0% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The co-located WQLK antenna system is mounted with its center of radiation 142.0 meters (465.9 feet) above the ground at the tower location and operates with an effective radiated power of 50.0 kilowatts (50,000 watts) in the horizontal and vertical plane (circularly polarized). At 2.0 meters above the ground at the base of the tower, the height of an average person, the WQLK antenna system contributes  $0.1026 \text{ mw/cm}^2$ .<sup>4</sup> Based on exposure limitations for a controlled environment, 10.3% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 51.3% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

WHON (AM), 930 kHz, is nearby and considered co-located with the proposed W237AT facility. The WHON directional antenna tower structure(s) are 90° in electrical height. Access to any tower base is no closer than 1.0 meter. By reference to Figure 2 of OET 65-A, a tower radiating 0.5 kilowatt will deliver 56.6 V/m (electric field) or 0.495 A/m (magnetic field). Since WHON operates on 930 kHz, the controlled and uncontrolled environment limits are the same.

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- 3) This level occurs at 32.0 meters out from the base of the tower and is considered worst case.
- 4) This level occurs at 30.0 meters out from the base of the tower and is considered worst case.

These figures represent 9.2% of the electric field limit of 614 V/m or 30.4% of the magnetic field limit of 1.630 A/m. Since the magnetic field is the greater of the two contributions, it is considered as a worst case contributor.

Combining the uncontrolled contribution of the proposed W237AT, W269BP, WQLK, and WHON a total of less than 94% of the allowed level of signal is delivered to the base of the tower. Since this is significantly less than the 100% level, the proposed W237AT facility is believed to be in compliance with the radio frequency radiation exposure limits, as required by the Federal Communications Commission. Further, Brewer will post warning signs in the vicinity of the tower warning of potential radio frequency radiation hazards at the site. In addition, Brewer 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.