

**MINOR CHANGE APPLICATION**  
**HARRISON RADIO STATIONS, INC.**  
**KNWA(AM) RADIO STATION**  
**has: 1600 kHz - 0.05/5.0 kW - ND**  
**req: 1600 kHz - 0.05/1.0 kW - ND**  
**BELLEFONTE, ARKANSAS**  
**December 2011**

**EXHIBIT #4**

**Radio Frequency Assessment**

This radio frequency radiation study is being conducted to determine whether this proposal is in compliance with OET Bulletin #65 and #65A, both dated August 1997, regarding human exposure to radio frequency radiation in the vicinity of broadcast towers. This study considers all nearby contributing stations, specifically the applied for KCWD<sup>1</sup>, and utilizes the appropriate formulas contained in the OET Bulletin.

KNWA operates a 90° tower on 1600 kHz, with a nominal power of 1.0 kilowatt daytime. A fence is placed 4.0 meters out from the base of each tower. The KNWA tower delivers an electric field of 16.0 V/m and a magnetic field of 0.200 A/m. As KNWA operates above 1340 kHz, the contributions for controlled and uncontrolled environments differ. For the controlled environment, KNWA provides 2.6% of the electrical limit and 12.3% of the magnetic limit at the fence perimeter. For the uncontrolled environment, KNWA provides 3.1% of the electrical limit and 14.6% of the magnetic limit at the fence perimeter. As the magnetic level in the uncontrolled environment is the highest, it will be considered the worst case value.

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1) KCWD has applied to relocate to the KNWA tower site, although it will not share the KNWA tower (BPH-20111216ABE). KCWD held a construction permit which expired December 15, 2011 for the same facilities application for in December 2011.

The proposed KCWD antenna system will be located at the proposed/ licensed KNWA site. While the stations will not share towers, they are considered co-located for RF calculation purposes. The proposed KCWD antenna system will be mounted with its center of radiation 135.9 meters (446.0 feet) above the ground at the proposed tower location and will operate with an effective radiated power of 50.0 kilowatts in the horizontal and vertical planes (circularly polarized). At 2.0 meters above the ground, at the base of the existing tower, the height of an average person, the KCWD antenna system will contribute  $0.1121 \text{ mw/cm}^2$  Based on exposure limitations for a controlled environment, 11.2% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 56.1% of the limit is reached at 2.0 meters above the ground at the base of the tower.

Combining the contributions of KNWA and KCWD, a total of 70.7% of the uncontrolled limit is reached at 2.0 meters above the ground at the fence perimeter. Since this level is below the 100% limit defined by the Commission, the proposed KNWA facility is believed to be in compliance with the radio frequency radiation exposure limits as required by the Federal Communications Commission. Further, HRS will insure warning signs are posted in the vicinity of the tower warning of potential radio frequency radiation hazards at the site. In addition, HRS 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.

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2) This level of field occurs at 36.0 meters out from the base of the tower and is considered worst case.