Doug Vernier
401 Main Street, Suite 213
Cedar Falls, Iowa 50613
Telecommunication Consultants
dvernier@v-soft.com (319)266-8402

August 20, 2014

R.F. Emissions Study
KNBX

The proposed tower is the existing tower of KNBX and KRKC-FM. This site was established prior to March 2001, therefore the site should be excluded from current environmental analysis requirements.

The existing (and proposed) KNBX transmission facility is located at a controlled site which is locked and gated. The proposed 3-bay full-wave spaced antenna will be energized such that it produces 3.07 kW effective radiated power, circularly polarized, from a center of radiation of 37 meters above ground. Under OST "worst case", using a height above ground of 35 meters to calculate the non-ionization radiation at a point two meters above ground (or head height), it can be shown that the proposed antenna produces 169.1 microwatts per square centimeter which is 16.9 percent of the controlled environment maximum.

KRKC-FM shares the same tower with its construction permit ERP of 2.85 kW and its antenna height above ground of 47 meters. Using the OET formulas, under worst case, it can be shown that the antenna produces 94 microwatts per square centimeter at head height, which is 9.4 percent of the maximum for a controlled area.

There is also a translator station, K206CC on the same tower. This station transmits, with an ERP of 0.01 kW at an antenna height above ground of 38 meters. Again, using the OET formula under "worst case", the calculations at head height show that this station will produce 0.516 microwatts per square centimeter, which is 0.0515 percent of the maximum allowed. (It should be noted that this translator station's ERP is under 100 watts and it therefore may be categorically excluded.)

Together, all three stations will produce 26.35 percent of the maximum at head height. KNBX has an agreement with the other stations at the site to reduce power or terminate transmissions should a worker need to be on the tower where exposure may be above the maximum allowable amount.

Consequently, KNBX meets all requirements of the Federal Communications Commission for protection of the public and workers at or near the tower site.

Prepared for KNBX by Doug Vernier