

**Engineering
KYRT Channel 250A
Hunt, TX
NIER Analysis**

Facilities Proposed

The proposed operation will be on Channel 250A (97.9 MHz) with an effective radiated power of 4.5 kilowatts. Operation is proposed with an omnidirectional antenna to be side-mounted on a new tower to be constructed 8 km north of Ingram, Texas. This tower will also be utilized by FM station KRZS.

NIER Calculations

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\text{mW} / \text{cm}^2) = \frac{33.40981 \times \text{AdjERP}(\text{Watts})}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

D is the distance in meters from the center of radiation to the calculation point.

"Worst case" calculations of the power density produced by the KYRT antenna system have been made using the above formula, presuming that the antenna will radiate 9 kilowatts (4.5 kW H + 4.5 kW V) straight down to a point 2 meters above ground level (128 meters below the antenna radiation center). The results indicate a maximum calculated ground level power density at the base of the tower of 18.4 $\mu\text{W}/\text{cm}^2$, which is 9.2% of 200 $\mu\text{W}/\text{cm}^2$ (the FCC standard for uncontrolled environments). This is a worst-case figure. The actual ground level power densities from the antenna to be used will likely be lower.

“Worst case” calculations of the power density produced by the KRZS antenna system have been made using the above formula, presuming that the antenna will radiate 22 kilowatts (11 kW H + 11 kW V) straight down to a point 2 meters above ground level (142 meters below the antenna radiation center). The results indicate a maximum calculated ground level power density at the base of the tower of $36.5 \mu\text{W}/\text{cm}^2$, which is 18.2% of $200 \mu\text{W}/\text{cm}^2$ (the FCC standard for uncontrolled environments). This is a worst-case figure. The actual ground level power densities from the antenna to be used will likely be lower.

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operations of KYRT and KRXS (were their maxima to coincide) is 27.4% of the FCC standard for uncontrolled environments.

Public access to the site will be restricted by a locked gate and the antenna tower will be posted with warning signs. Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken.

The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency radiation in excess of FCC guidelines.