

**January 2009
KXML Channel 260C
Fairfield, ID
NIER Analysis**

Facilities Proposed

The proposed operation will be on Channel 260C (99.9 MHz) with an effective radiated power of 40 kilowatts. Operation is proposed with an 8-bay, 0.9-wavelength-spaced, omnidirectional antenna to be mounted on a new tower to be constructed atop Bennett Mountain. The tower will not exceed 60.96 meters (200 feet) above ground and does not require notification to the Federal Aviation Administration. Therefore, this structure does not require an Antenna Structure Registration Number.

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.

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

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.

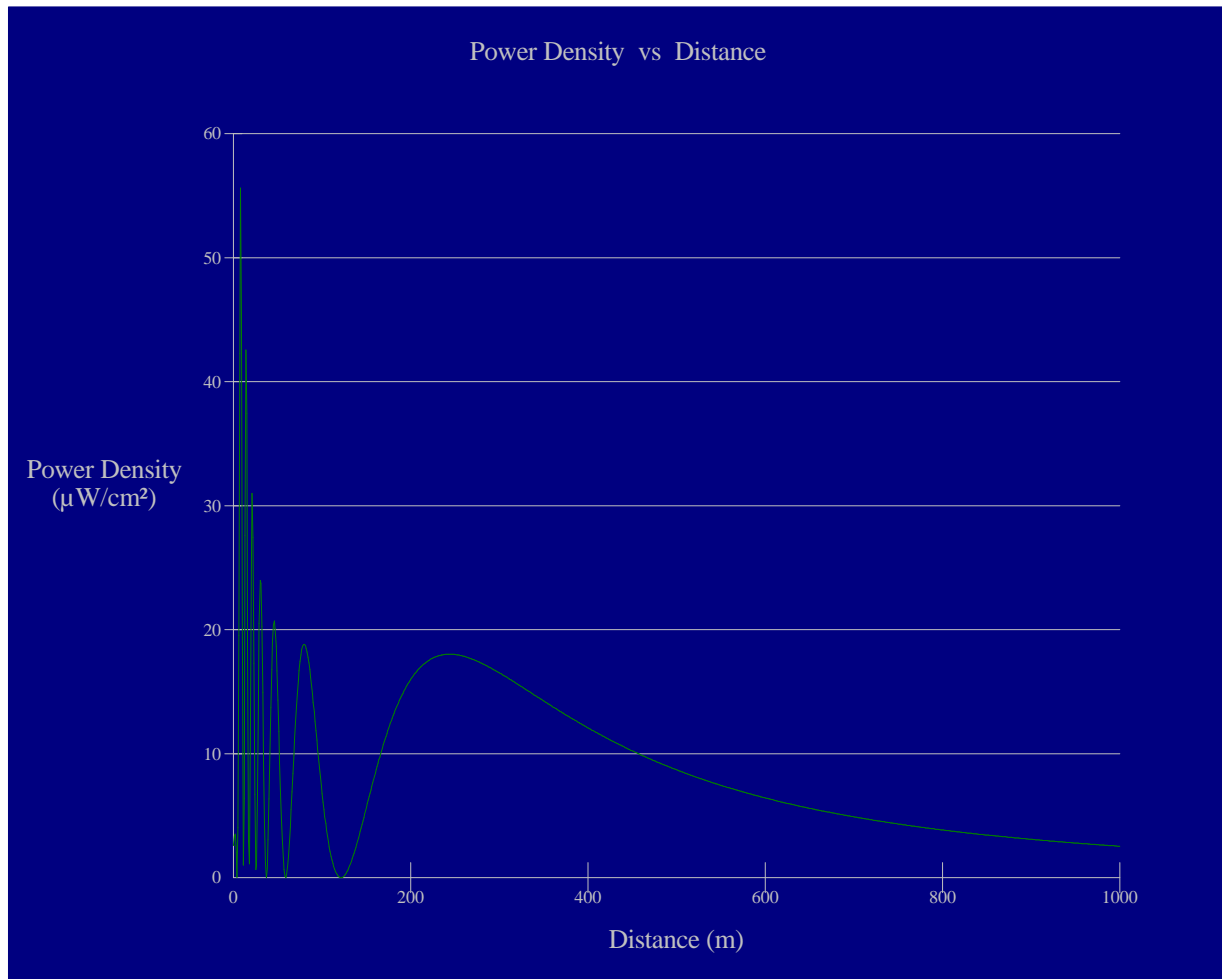
Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 1000 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed KXML antenna system assume a Type 6 element pattern, which is the element pattern for the Shively antenna proposed for use. The highest calculated ground level power density occurs at a distance of 8 meters from the base of

the antenna support structure. At this point the power density is calculated to be $55.6 \mu\text{W}/\text{cm}^2$, which is 5.6% of $1000 \mu\text{W}/\text{cm}^2$ (the FCC standard for controlled environments) and 27.8% of $200 \mu\text{W}/\text{cm}^2$ (the FCC standard for uncontrolled environments).

Two nearby FM translators (K268BP and K272DV Mountain Home) each operate with less than 100 Watts ERP and thus are excluded from further study.

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.



Ground-Level NIER

OET FMModel

KXML 260C Fairfield

Antenna Type: Shively 6810 Series

No. of Elements: 8

Element Spacing: 0.9 wavelength

Distance: 1000 meters

Horizontal ERP: 40 kW

Vertical ERP: 40 kW

Antenna Height: 19 meters AGL

Maximum Power Density is 55.6 : W/cm² at 8 meters from the antenna structure.

Hatfield & Dawson Consulting Engineers