June 2009
KTCV(FM) Channel 201A
Kennewick, WA
NIER Analysis

Facilities Proposed

The proposed operation will be on Channel 201A (88.1 MHz) with an effective radiated power of 3.5 kilowatts. Operation is proposed with a vertically-polarized omni-directional antenna, which will be side-mounted on the existing KTCV tower located at the Tri-Tech Skills Center in Kennewick, Washington.

The FCC Antenna Structure Registration Number for the tower is 1209436. The coordinates of this tower are being corrected as a part of this application. Notice of the tower coordinate correction has been filed with the Federal Aviation Administration on FAA Form 7460-1. Upon receipt of the FAA's determination of no hazard, the FCC Antenna Structure Registration for the tower will be updated to match.

NIER Calculations

Study of the area within 1000 meters of the proposed site reveals no other likely sources of non-ionizing radiation. Thus, precise calculations are made only with regard to the levels from this proposal.

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.

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

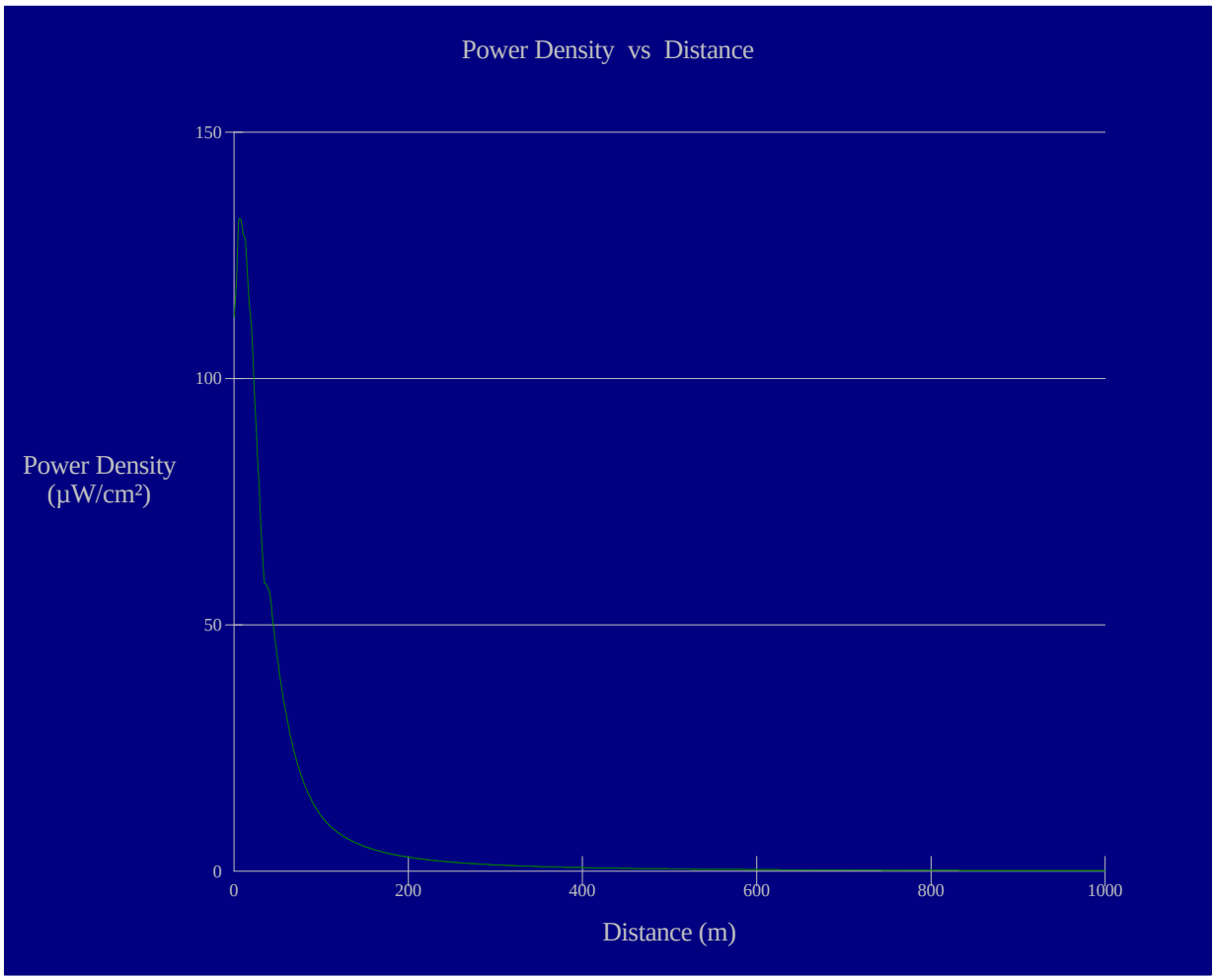
Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

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.

The precise model of antenna to be used has not yet been selected. Therefore, calculations of the power density produced by the proposed KTCV antenna system assume a Type 1 element pattern, which is the "worst case" element pattern for a ring-stub or dipole antenna. Under this worst-case assumption, the highest calculated ground level power density occurs at a distance of 7 meters from the base of the antenna support structure. At this point the power density is calculated to be 132.5 $\mu W/cm^2$, which is 13.3% of 1000 $\mu W/cm^2$ (the FCC standard for controlled environments) and 66.3% of 200 $\mu W/cm^2$ (the FCC standard for uncontrolled environments).

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**

KTCV 201A Kennewick

Antenna Type:	1-bay dipole assumed for “worst case” study
No. of Elements:	1
Element Spacing:	dna
Distance:	1000 meters
Horizontal ERP:	3.5 kW
Vertical ERP:	3.5 kW
Antenna Height:	31 meters AGL

Maximum Power Density is 132.5 ：W/cm^2 at 7 meters from the antenna structure.