

**January 2007  
KKRV Channel 284C2  
Wenatchee, WA  
STA Request  
NIER Analysis**

**Facilities Proposed**

The proposed STA operation will utilize a 1-element circularly-polarized omnidirectional antenna. The antenna will be side-mounted on an existing tower atop Badger Mountain. The antenna support structure does 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.

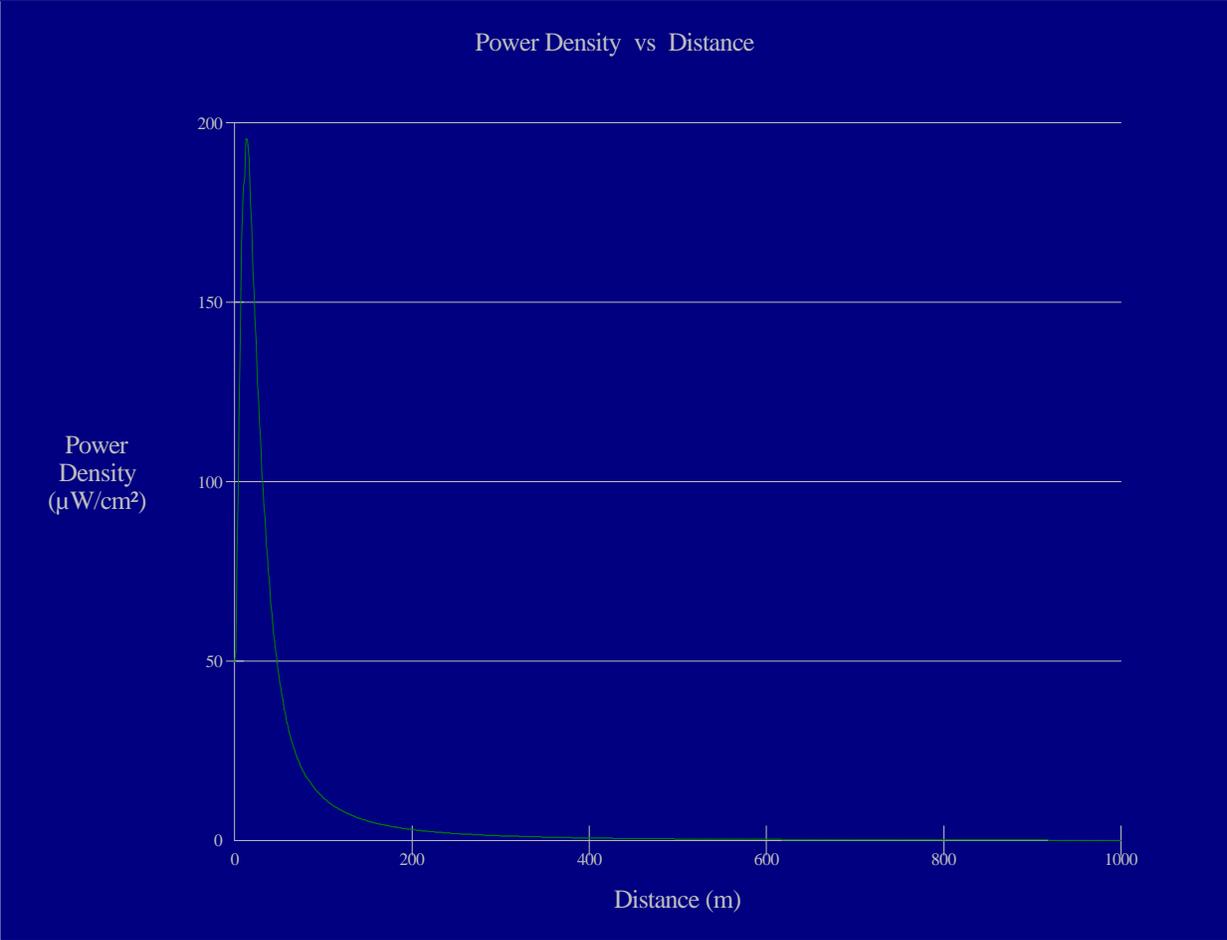
Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 1000 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed STA antenna system assume a Type

2 element pattern, which is the element pattern for the “double V” antenna proposed for use. The highest calculated ground level power density occurs at a distance of 13 meters from the base of the antenna support structure. At this point the power density is calculated to be 195.7  $\mu\text{W}/\text{cm}^2$ , which is 97.9% of the FCC standard for uncontrolled environments. There are no other broadcast users of this site

The antenna tower is fenced and 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.



**Ground-Level NIER**

**OET FMModel**

KKRK 284C2 Wenatchee STA  
 Antenna Type: Jampro "double V"  
 No. of Elements: 1  
 Element Spacing: dna

Distance: 1000 meters  
 Horizontal ERP: 1.8 kW  
 Vertical ERP: 1.8 kW

Antenna Height: 15 meters AGL

Maximum Power Density is 195.7 : W/cm<sup>2</sup> at 13 meters from the antenna structure.