Facilities Proposed

The proposed operation will be on Channel 261A (100.1 MHz) with an effective radiated power of 0.450 kilowatts. Operation is proposed with a 1-element circularly-polarized omni-directional antenna. The antenna will be side-mounted on an existing tower located at Jump Off Joe Butte.

The proposed antenna support structure 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.

RF Exposure 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.

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

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.

Calculations of the power density produced by the proposed Nicom BKG77-1 antenna system assume the "worst case" Type 1 element pattern. The highest calculated ground level power density occurs at a distance of 3 meters from the base of the antenna support structure. At this point the power density is calculated to be 119.8 µW/cm², which is 12% of 1000 µW/cm² (the FCC

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standard for controlled environments) and 59.9% of 200 μW/cm^2 (the FCC standard for uncontrolled environments).

Two FM translators are located close to the KRKG-FM tower site: K282AA and unbuilt K258CN.

> The highest calculated ground level power density from K282AA occurs at a distance of 6 meters from the base of the antenna support structure. At this point the power density is calculated to be 22.8 μW/cm^2, which is 2.3% of 1000 μW/cm^2 (the FCC standard for controlled environments) and 11.4% of 200 μW/cm^2 (the FCC standard for uncontrolled environments).

> The highest calculated ground level power density from unbuilt K258CN 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 22.0 μW/cm^2, which is 2.2% of 1000 μW/cm^2 (the FCC standard for controlled environments) and 11.0% of 200 μW/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 exposure in excess of FCC guidelines.

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Power Density vs Distance
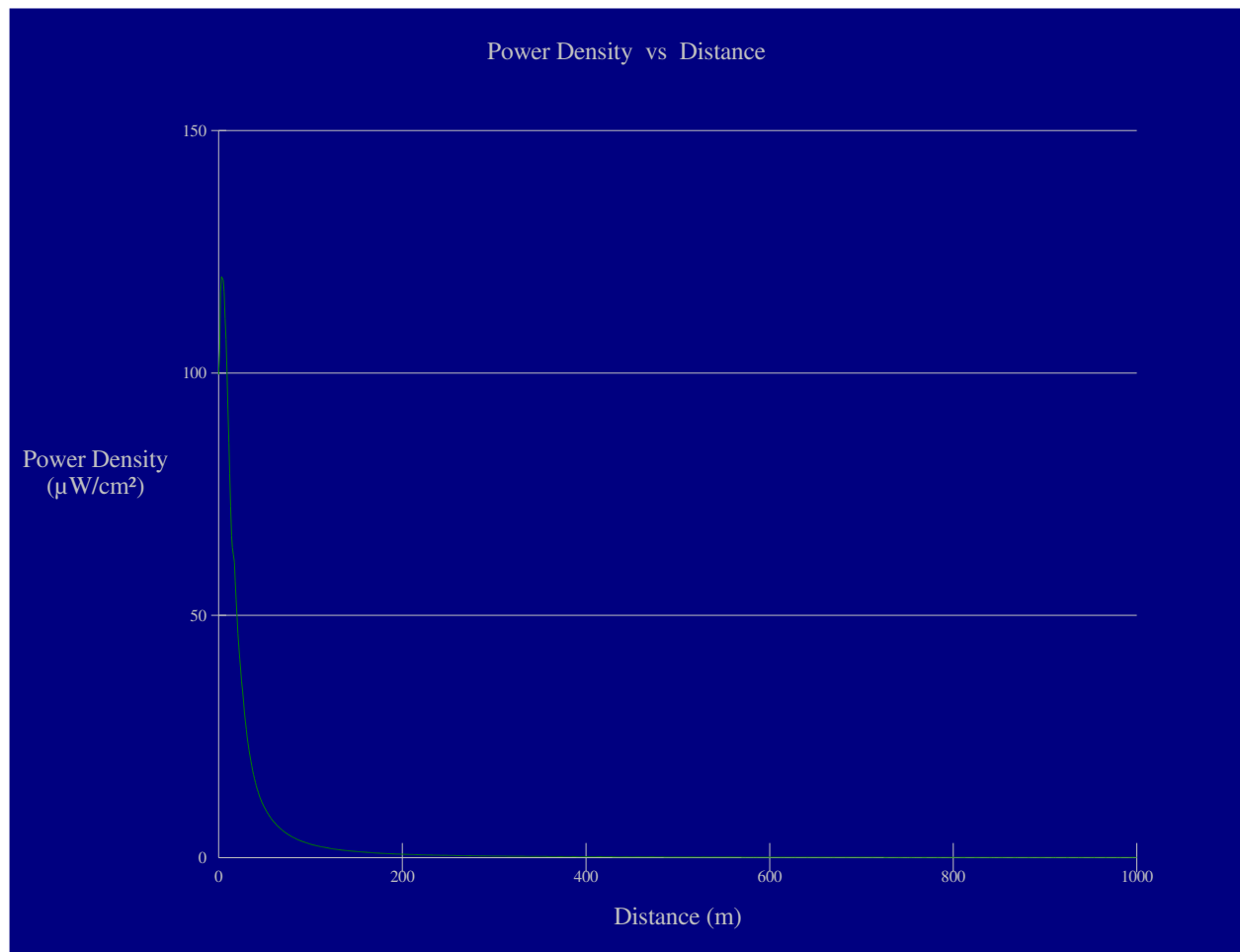
Ground-Level RF Exposure   **OET FMModel**

KRKG-FM 261A Pasco
Antenna Type: Nicom BKG77-1
No. of Elements: 1
Element Spacing: 1.0 wavelength

Distance: 1000 meters
Horizontal ERP: 0.450 kW
Vertical ERP: 0.450 kW

Antenna Height: 14 meters AGL

Maximum Calculated Power Density is 119.8 $\mu W/cm^2$ at 3 meters from the antenna structure.

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