

**November 2011
KDNM(FM) Channel 211A
Reserve, NM
RF Exposure Study**

Facilities Proposed

The proposed operation will be with an effective radiated power of 0.9 kilowatts. Operation is proposed with a 2-element circularly-polarized omni-directional antenna. The antenna will be mounted on an existing structure.

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.

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 KDNM antenna system assume a Type 6 element pattern, which is the appropriate element pattern for the Shively 6812B-2 antenna

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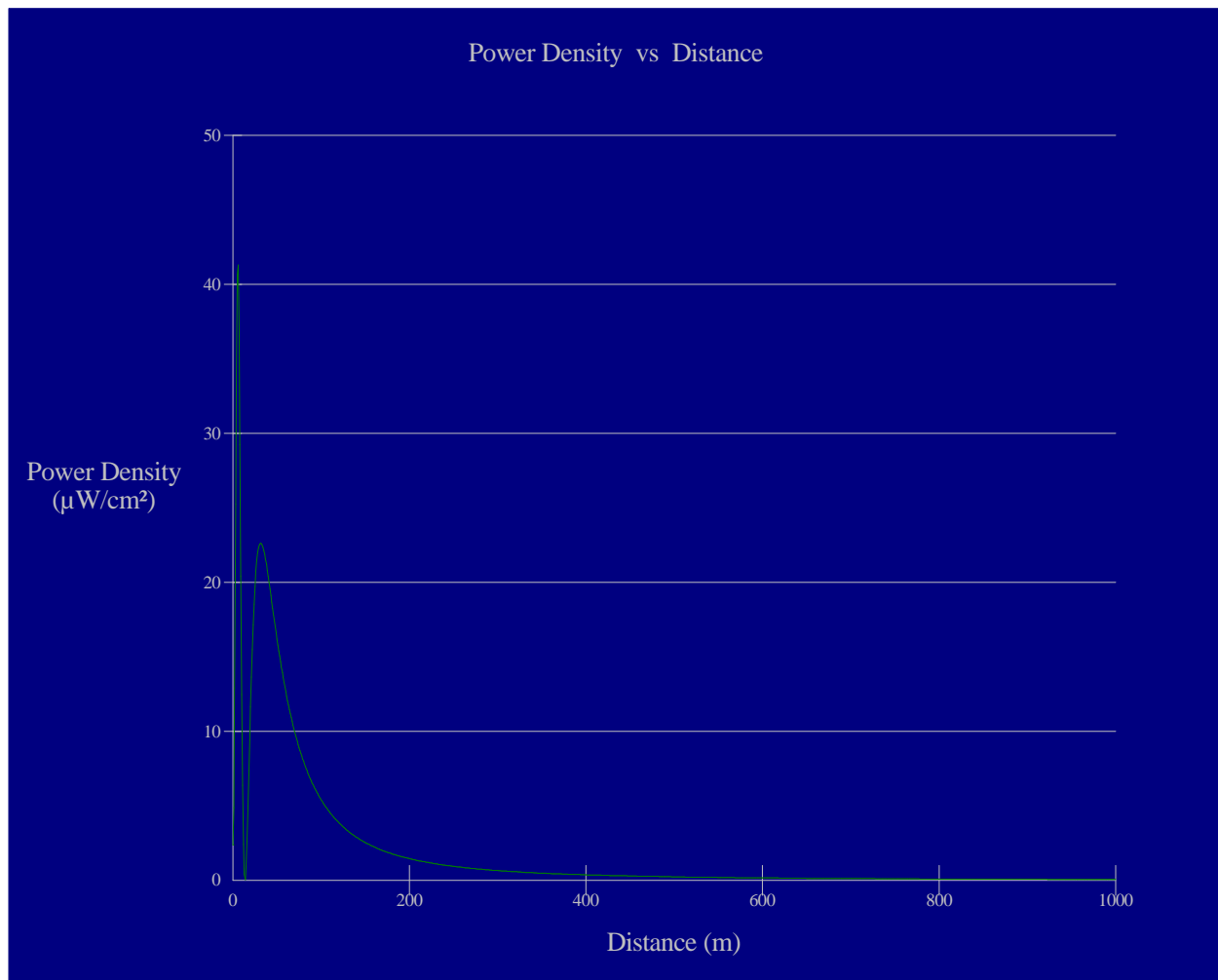
proposed for use. The highest calculated ground level power density occurs at a distance of 6 meters from the base of the antenna support structure. At this point the power density is calculated to be $41.3 \mu\text{W}/\text{cm}^2$.

FM station KRZV 216A is also authorized for operation at this site. Calculations of the power density produced by the KRZV antenna system assume a Type 1 element pattern, which is the “worst case” element pattern for a ring-stub antenna. Under this worst-case assumption, 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 $40.2 \mu\text{W}/\text{cm}^2$.

FM station KZXQ is licensed for operation at this antenna site, but will be relocating to a new transmitter site as approved in BPH-20071025ACM. Since the KDNM antenna system described herein will take the place of the existing KZXQ antenna, no further consideration of KZXQ is believed necessary in this analysis.

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation of KDNM and the authorized operation of KRZV is $81.5 \mu\text{W}/\text{cm}^2$, which is 8.2% of $1000 \mu\text{W}/\text{cm}^2$ (the FCC standard for controlled environments) and 40.8% of $200 \mu\text{W}/\text{cm}^2$ (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.



Ground-Level RF Exposure

OET FMModel

KDNM 211A Reserve

Antenna Type: Shively 6812B-2

No. of Elements: 2

Element Spacing: 0.85 wavelength

Distance: 1000 meters

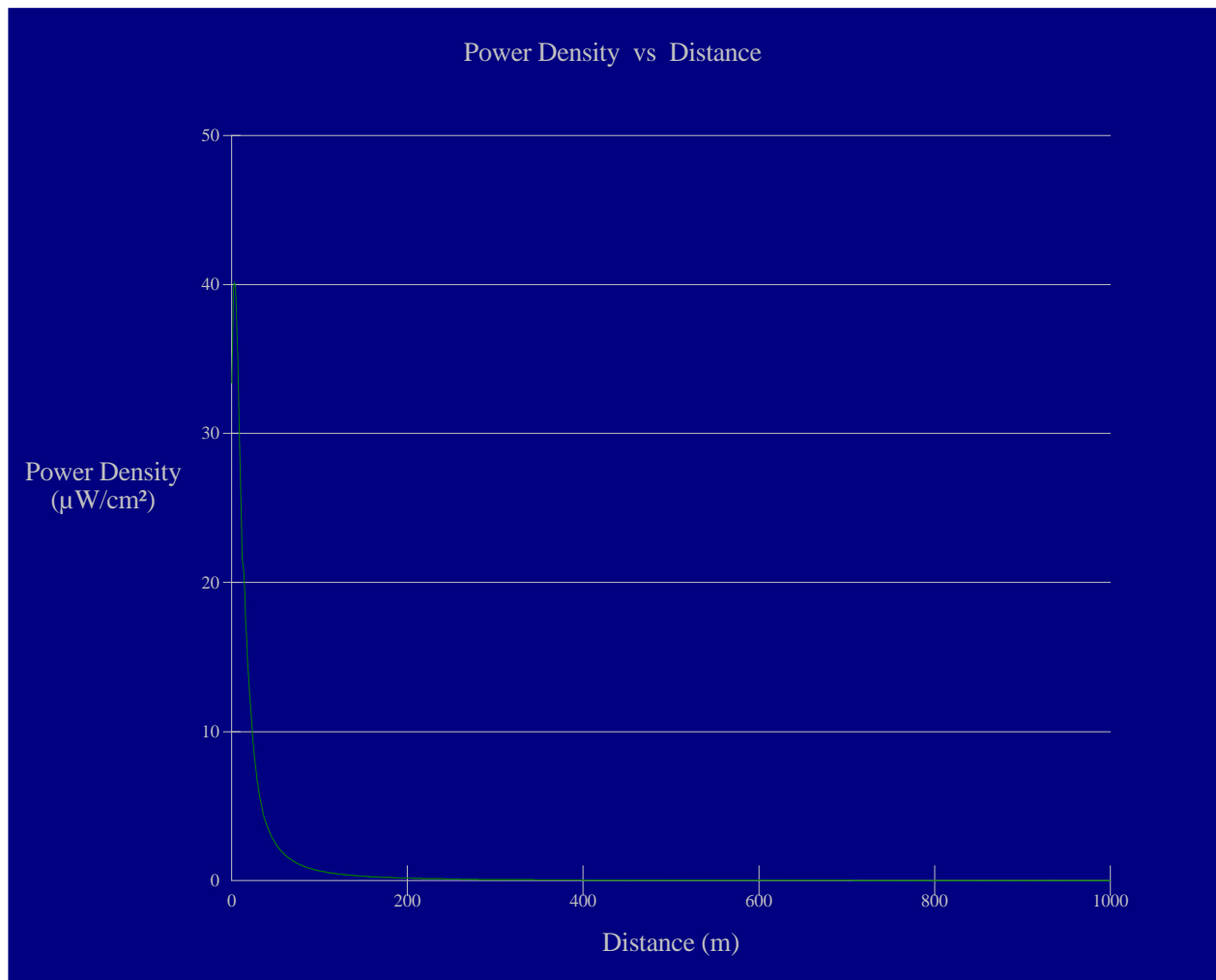
Horizontal ERP: 0.9 kW

Vertical ERP: 0.9 kW

Antenna Height: 12 meters AGL

Maximum Calculated Power Density is $41.3 \mu\text{W}/\text{cm}^2$ at 6 meters from the antenna structure.

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Ground-Level RF Exposure

OET FMModel

KRZV 216A Reserve

Antenna Type: worst-case ring-stub assumed
No. of Elements: 1
Element Spacing: dna

Distance: 1000 meters
Horizontal ERP: 0.1 kW
Vertical ERP: 0.1 kW

Antenna Height: 12 meters AGL

Maximum Calculated Power Density is $40.2 \mu\text{W}/\text{cm}^2$ at 3 meters from the antenna structure.

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