

**August 2007  
KXXI(FM) Channel 2229C0  
Gallup, NM  
Allocation Study**

The attached spacing study shows that the proposed operation meets the co-channel and adjacent channel spacing requirements for Class C0 stations as prescribed in §73.207 of the Commission's Rules.

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SEARCH PARAMETERS FM Database Date: 070823

Channel: 229C0 93.7 MHz Page 1

Latitude: 35 36 22

Longitude: 108 41 26

Safety Zone: 50 km

Job Title: KXXI 229C0 GIBSON PEAK

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
NEW-T APP	FORT DEFIANCE AZ	BNPFT-030317CDU	227D 93.3	0.023 337.0	35-40-16 109-12-28	278.9	47.40 0.00	0 TRANS
KSNX LIC	SHOW LOW AZ	BLH-950905KE	228C3 93.5	25.000 45.0	34-13-14 110-01-49	218.8	196.51 33.51	163 CLEAR
NEW-T APP	CORTEZ CO	BNPFT-030317CSO	229D 93.7	0.092 168.0	37-21-01 108-33-09	3.6	193.94 0.00	0 TRANS
NEW-T APP	ALBUQUERQUE NM	BNPFT-030313AIG	229D 93.7	0.250 95.0	35-08-23 106-35-21	104.6	197.85 0.00	0 TRANS
NEW-T APP	ALBUQUERQUE NM	BNPFT-030317MIB	229D 93.7	0.010 1575.0	35-13-02 106-27-08	101.4	207.84 0.00	0 TRANS
KXXI LIC	GALLUP NM	BLH-911112KI	229C 93.7	100.000 382.0	35-36-22 108-41-26	0.0	0.00 -281.00	281 SHORT
ABSOLUTE MINIMUM 73.215 SPACING = 270 KM								
NEW-T APP	PARADISE HILLS NM	BNPFT-030313BGX	229D 93.7	0.250 113.0	35-06-24 106-35-30	105.7	198.66 0.00	0 TRANS
NEW-T APP	RIO RANCHO NM	BNPFT-030313BMG	229D 93.7	0.010 1569.0	35-12-54 106-27-04	101.4	207.99 0.00	0 TRANS
NEW-T APP	SANTA FE NM	BNPFT-030317BMZ	229D 93.7	0.062 215.0	35-41-20 105-58-42	87.1	245.80 0.00	0 TRANS
K229AT CP	MONTICELLO UT	BNPFT-030828AGA	229D 93.7	0.013 493.0	37-48-05 109-25-30	345.2	252.29 0.00	0 TRANS
KMGN LIC	FLAGSTAFF AZ	BMLH-940818KG	230C 93.9	100.000 460.0	34-58-08 111-30-28	255.3	265.85 45.85	220 CLEAR
NEW-T APP	SPRINGERVILLE AZ	BNPFT-030317EDP	230D 93.9	0.250 169.0	34-08-17 109-16-10	198.1	171.24 0.00	0 TRANS
K230AF LIC	KIRTLAND NM	BLFT-971201TH	230D 93.9	0.250 245.0	36-39-49 108-12-55	19.8	124.89 0.00	0 TRANS
NEW-T APP	ST. JOHNS AZ	BNPFT-030317EQS	231D 94.1	0.115 146.0	34-34-18 109-16-43	205.1	126.67 0.00	0 TRANS

44444 END OF FM SPACING STUDY FOR CHANNEL 229 44444

**August 2007**  
**KYVA-FM Channel 279C0 Church Rock, NM**  
**KKOR(FM) Channel 233C0 Gallup, NM**  
**KXXI (FM) Channel 229C0 Gallup, NM**  
**NIER Analysis**

**Facilities Proposed**

Millennium Media proposes to consolidate three FM stations on a new tower to be located on Gibson Peak in New Mexico. The proposed operations will be on Channel 279 (103.7 MHz) and Channel 233 (94.5 MHz) using the same 10-element antenna with effective radiated powers of 100 kilowatts and 85 kilowatts respectively, and Channel 229 (93.7 MHz) using a separate 10-element antenna located lower on the tower. Both antennas will be circularly-polarized omni-directional full-wave-spaced antennas and will be side-mounted on a uniform cross-section guyed tower.

Notice of the proposed tower construction has been filed with the Federal Aviation Administration on FAA Form 7460-1. Upon receipt of the FAA's determination of no hazard, FCC Antenna Structure Registration for the tower will be filed on Form 854, and the resulting Antenna Structure Registration Number will be promptly supplied to the Audio Division.

**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.

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

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

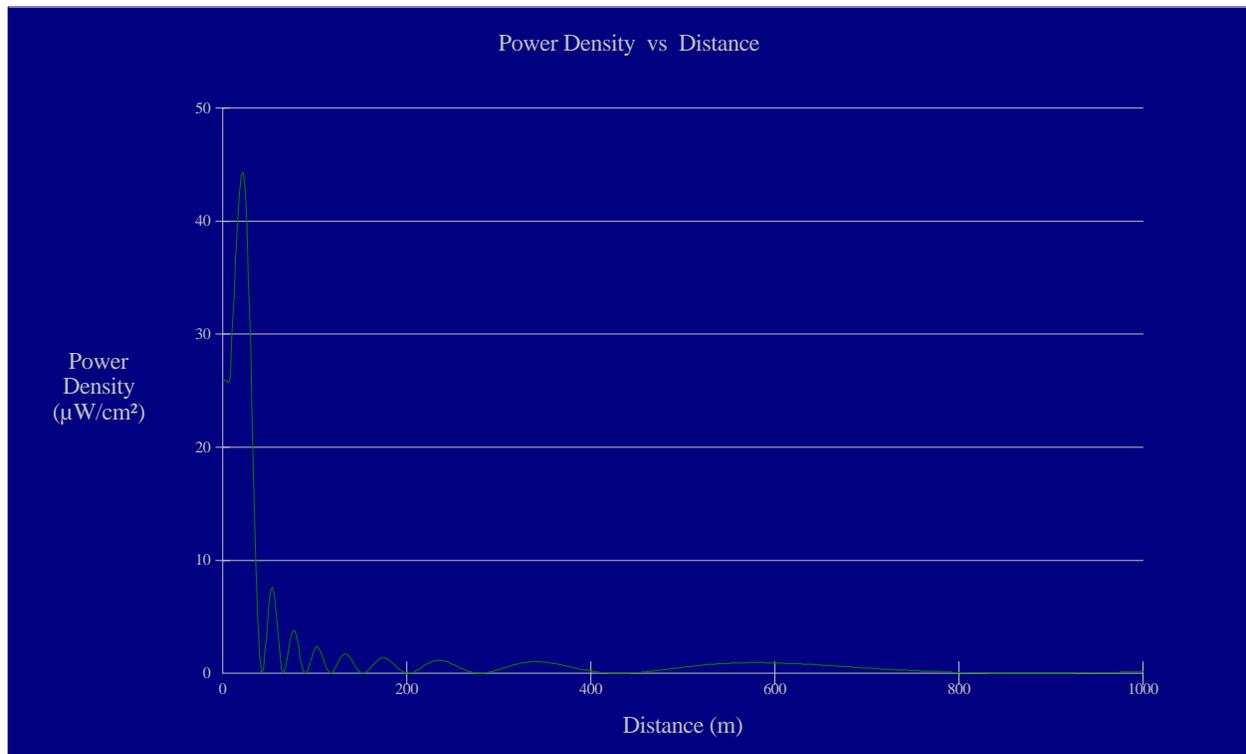
the tower to a distance of 1000 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed facilities at this transmitter site are summarized in the following table:

Call	Avg or Peak ERP Antenna Model	Relative Field	Height AGL	Calculated Exposure	Gen Pub FCC Limit	% of Limit
KYVA-FM	100 kW avg ERI Rototiller	FMMModel	90 m	44.3 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	22.2%
KKOR(FM)	85 kW avg ERI Rototiller	FMMModel	90 m	37.7 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	18.9%
KXXI(FM)	100kW avg ERI Rototiller	FMMModel	54 m	126.5 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	63.3%

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operations of KYVA-FM, KKOR and KXXI (were their maxima to coincide, which they do not) is 208.5  $\mu\text{W}/\text{cm}^2$ , which is 20.9% of 1000  $\mu\text{W}/\text{cm}^2$  (the FCC standard for controlled environments) and 104.3% of 200  $\mu\text{W}/\text{cm}^2$  (the FCC standard for uncontrolled environments). The authorized co-located facilities of KLLU and KGLP would (once constructed) add to the ground-level power density at the site. Post-construction power density measurements will be done at the site if required by the Commission.

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

KYVA-FM Church Rock, NM

Antenna Type: ERI "rototiller"

No. of Elements: 10

Element Spacing: 1.0 wavelength

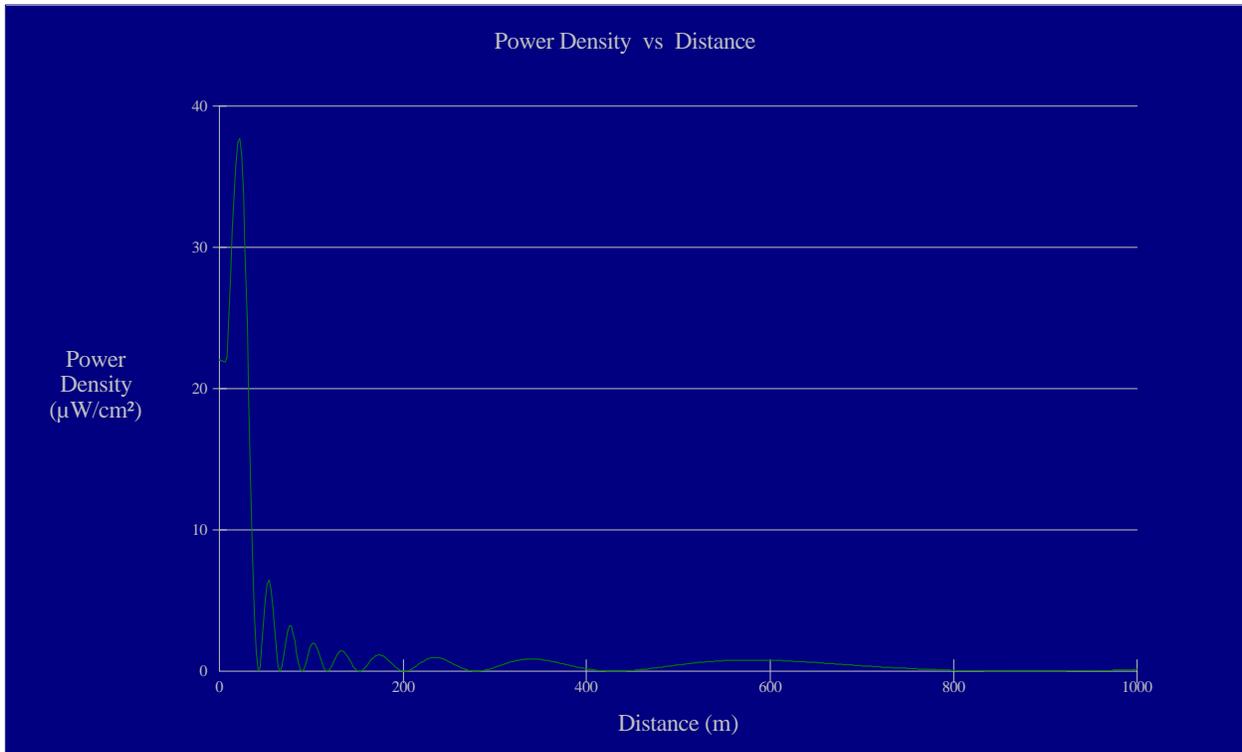
Distance: 1000 meters

Horizontal ERP: 100 kW

Vertical ERP: 100 kW

Antenna Height: 90 meters AGL

Maximum Power Density is 44.3  $\mu\text{W}/\text{cm}^2$  at 22 meters from the antenna structure.



**Ground-Level NIER**

**OET FMModel**

KKOR Gallup, NM

Antenna Type: ERI "rototiller"

No. of Elements: 10

Element Spacing: 1.0 wavelength

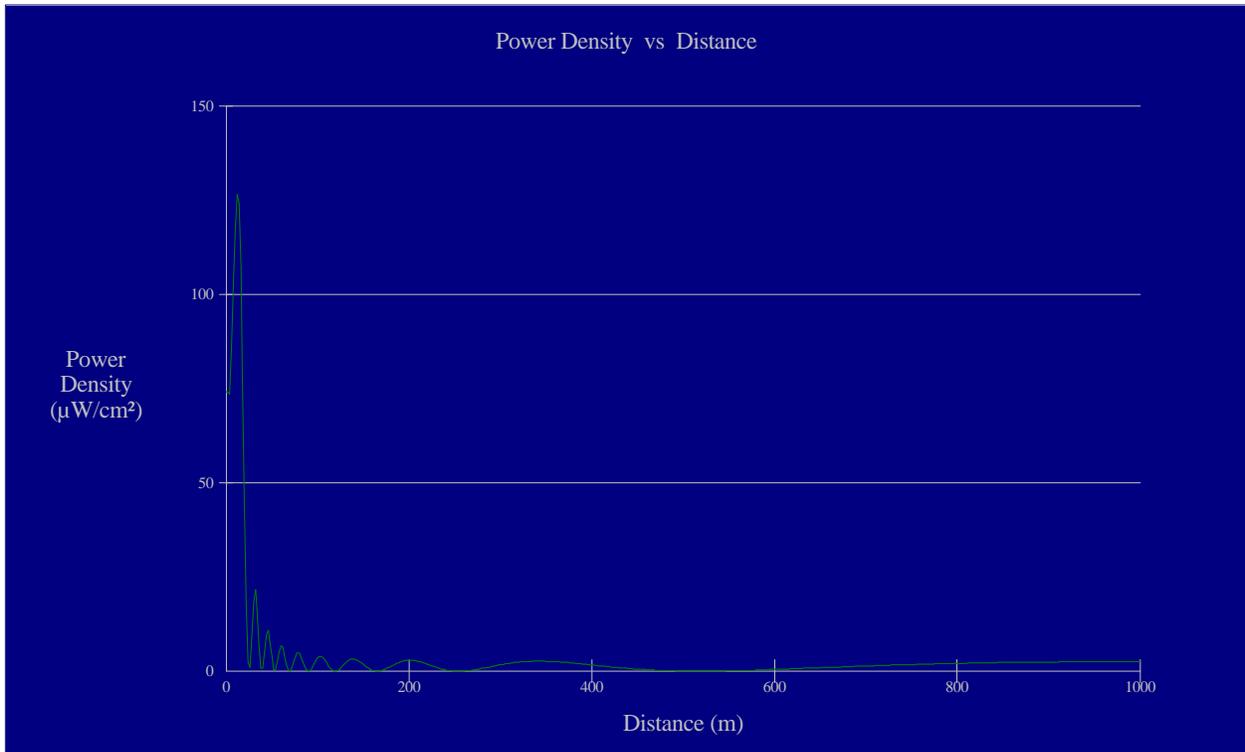
Distance: 1000 meters

Horizontal ERP: 85 kW

Vertical ERP: 85 kW

Antenna Height: 90 meters AGL

Maximum Power Density is 37.7  $\mu\text{W}/\text{cm}^2$  at 22 meters from the antenna structure.



**Ground-Level NIER**

**OET FMModel**

KXXI Gallup, NM

Antenna Type: ERI "rototiller"

No. of Elements: 10

Element Spacing: 1.0 wavelength

Distance: 1000 meters

Horizontal ERP: 100 kW

Vertical ERP: 100 kW

Antenna Height: 54 meters AGL

Maximum Power Density is 126.5  $\mu\text{W}/\text{cm}^2$  at 12 meters from the antenna structure.