April 2009
KKYZ(FM) Channel 269A
Sierra Vista, AZ
STA Facility NIER Analysis

Facilities Proposed

The proposed operation will be on Channel 269A (101.7 MHz) with an effective radiated power of 1.4 kilowatts. Operation is proposed with a 1-element circularly-polarized omni-directional antenna. The antenna will be side-mounted on the KNXN(AM) tower in Sierra Vista. The FCC Antenna Structure Registration Number for the proposed tower is 1020435.

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.

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

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.

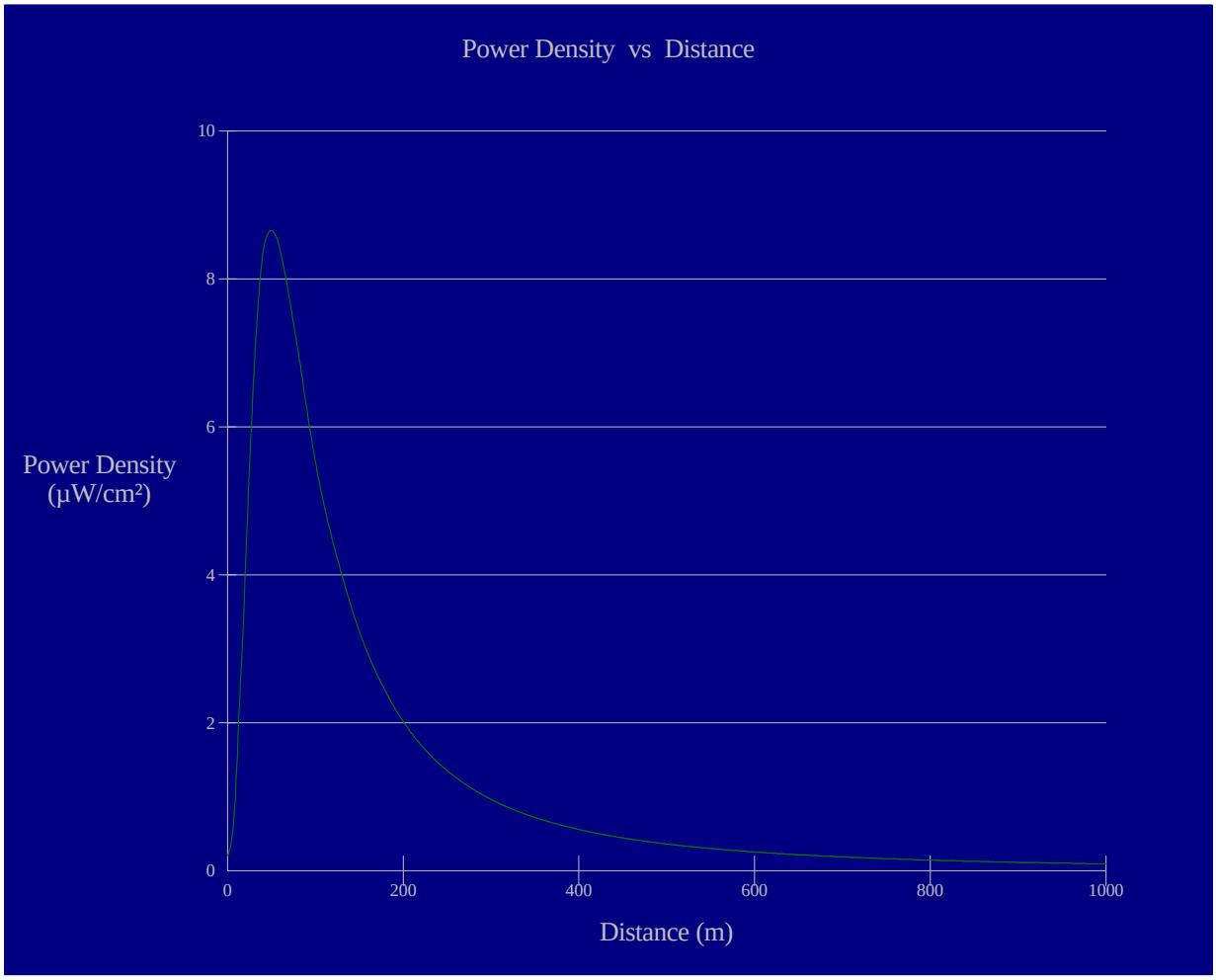
Calculations of the power density produced by the proposed antenna system assume a Type 6 element pattern, which is the element pattern for the Shively 6813-1 antenna proposed for use. The highest calculated ground level power density occurs at a distance of 50 meters from the base of the antenna support structure. At this point the power density is calculated to be 8.7 μW/cm²,

which is 0.9% of 1000 $\mu W/cm^2$ (the FCC standard for controlled environments) and 4.4% of 200 $\mu W/cm^2$ (the FCC standard for uncontrolled environments).

Public access to the site is restricted by a locked gate and the antenna tower is 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.

AM station KNXN operates on 1470 kHz with 2500 Watts nondirectional day and 39 Watts nondirectional at night. The tower is 93.0 electrical degrees tall, or 26% of the station wavelength. Using Tables 1-4 in OET Bulletin No. 65, the worst-case fencing distance requirement for KNXN is 2 meters from the tower base. The tower is fenced to at least that distance.



Ground-Level NIER **OET FMModel**

KKYZ Sierra Vista STA operation

Antenna Type:	Shively 6813-1
No. of Elements:	1
Element Spacing:	dna
Distance:	1000 meters
Horizontal ERP:	1.4 kW
Vertical ERP:	1.4 kW
Antenna Height:	50 meters AGL

Maximum Power Density is 8.7 : W/cm^2 at 50 meters from the antenna structure.