Facilities Proposed

The proposed auxiliary facility operation will be on Channel 269A (101.7 MHz) with an effective radiated power of 0.225 kilowatts. Operation is proposed with a 1-element circularly-polarized omni-directional antenna, side-mounted on the KNXN(AM) tower in Sierra Vista. The FCC Antenna Structure Registration Number for the tower is 1020435.

KKYZ holds a construction permit for operation at Catalina Foothills, Arizona. However, this application is for an auxiliary facility for the licensed operation at Sierra Vista.

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 500 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed antenna system assume a Type 1 element pattern, which is the element pattern used by the Commission's FMModel program for the Shively 6813-1 antenna. 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
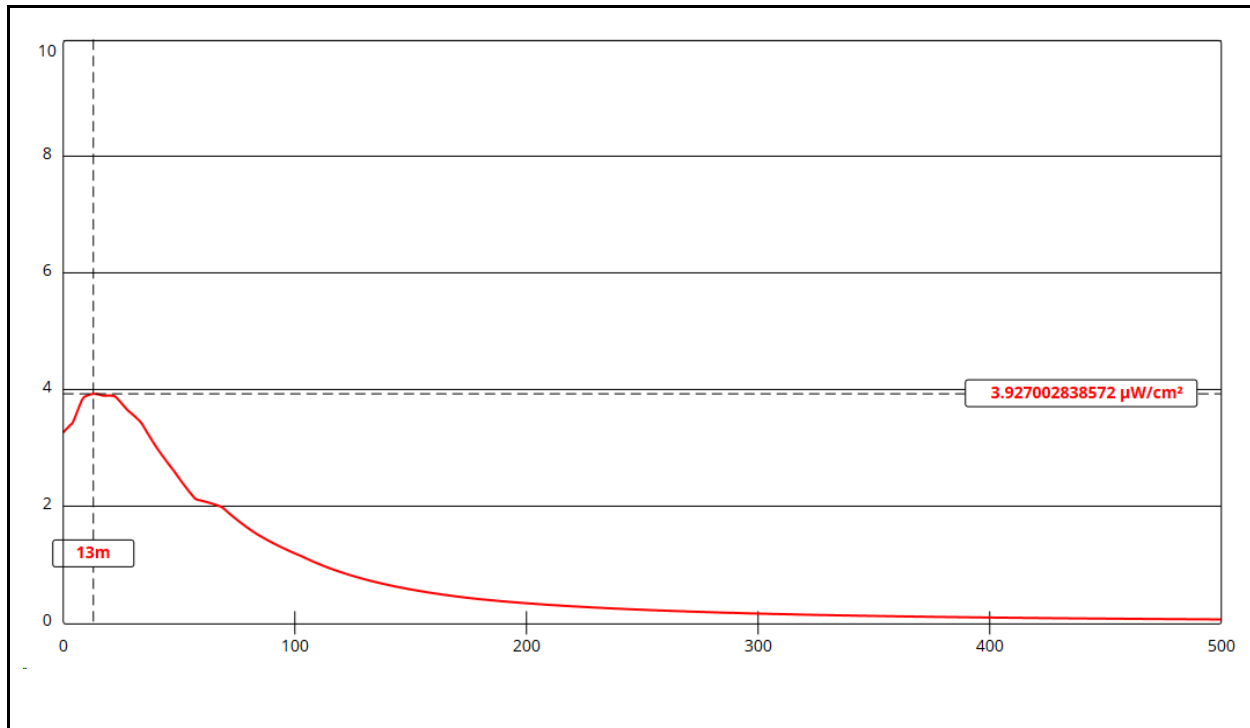
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calculated to be 3.9 µW/cm², which is 0.39% of 1000 µW/cm² (the FCC standard for controlled environments) and 1.95% of 200 µW/cm² (the FCC standard for uncontrolled environments).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation of KKYZ alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 500 meters from the base of the antenna support structure. Section 1.1307(b)(3) of the Commission's Rules excludes applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicant's proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 *et seq* and no further analysis of RF exposure at this site is required in this application.

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

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 RF Exposure   **OET FMModel**
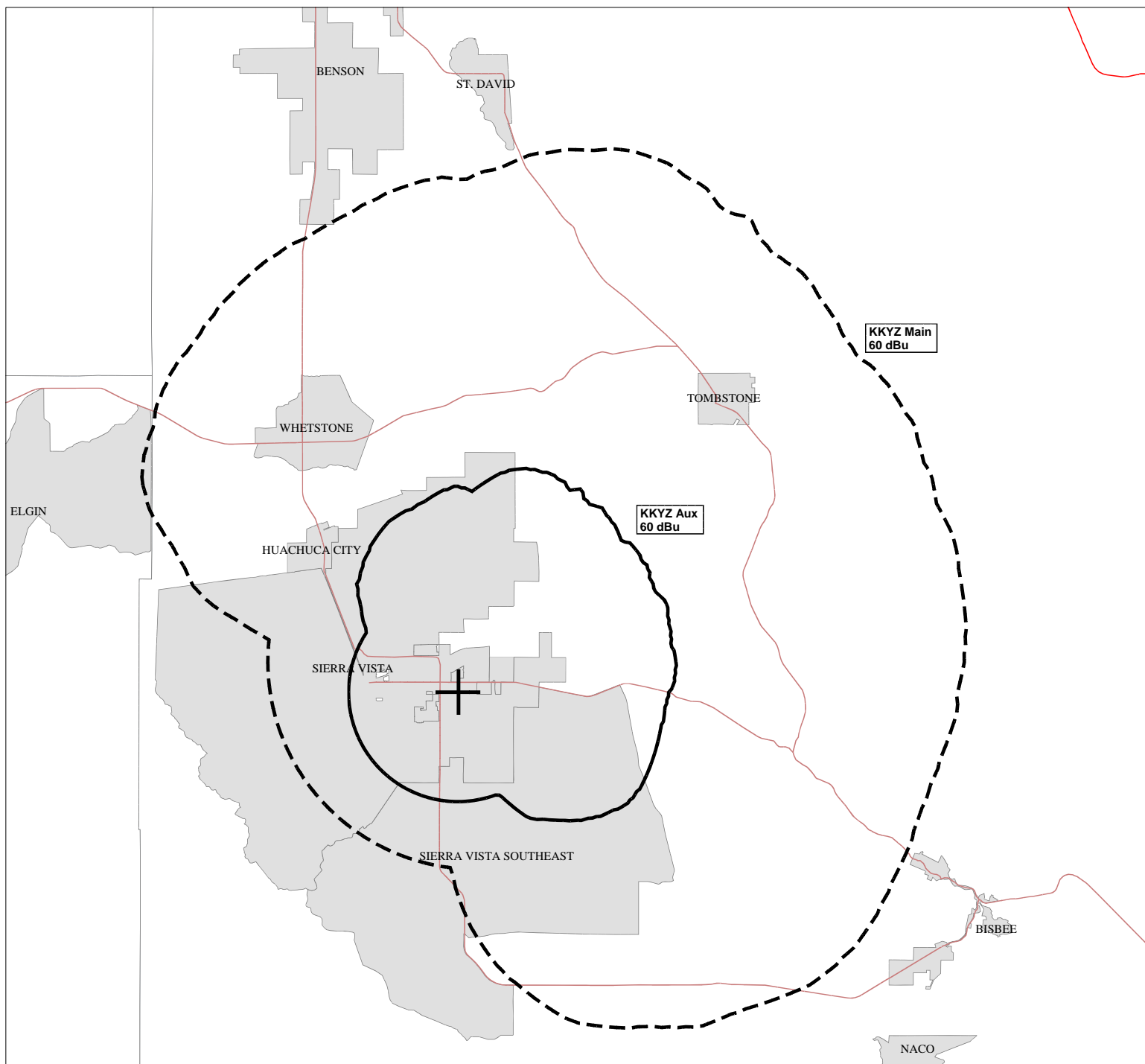
KKYZ 269A Auxiliary Antenna
Antenna Type: Shively 6813-1
No. of Elements: 1
Element Spacing: dna

Distance: 500 meters
Horizontal ERP: 225 watts
Vertical ERP: 225 watts

Antenna Height: 50 meters AGL

Maximum Calculated Power Density is 3.9 µW/cm² at 13 meters from the antenna structure.

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BENSON

ST. DAVID

KKYZ Main
60 dBu

TOMBSTONE

WHETSTONE

ELGIN

KKYZ Aux
60 dBu

HUACHUCA CITY

SIERRA VISTA

SIERRA VISTA SOUTHEAST

BISBEE

NACO

M   E   X

KKYZ Auxiliary Contour Map

0   5   10   15

Kilometers

Hatfield & Dawson   8/2018