

May 2022
KRZY-FM Channel 290C
Santa Fe, New Mexico
Auxiliary Antenna

Amendment

This amendment to the KRZY-FM auxiliary antenna application adjusts the proposed ERP from 48 watts to 45 watts, to ensure that the auxiliary 60 dBu contour is completely contained within the main 60 dBu contour as calculated by the FCC.

Facilities Proposed

The instant application proposes a new auxiliary (backup) antenna for KRZY-FM, to be located “offsite” at the Sandia Crest communications site. The attached contour map demonstrates that the auxiliary 60 dBu contour is completely contained within the main 60 dBu contour.

The proposed auxiliary operation will be on Channel 290C (105.9 MHz) with an effective radiated power of 45 watts. Operation is proposed with a 1-element circularly-polarized omni-directional antenna. The antenna will be side-mounted on an existing tower, currently used by KTFQ-DT. The proposed antenna support structure does 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.

DETERMINATION Results	
Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.	
Your Specifications	
NAD83 Coordinates	
Latitude	35-12-41.1 north
Longitude	106-26-58.0 west
Measurements (Meters)	
Overall Structure Height (AGL)	46
Support Structure Height (AGL)	26
Site Elevation (AMSL)	3243
Structure Type	
LTOWER - Lattice Tower	

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.

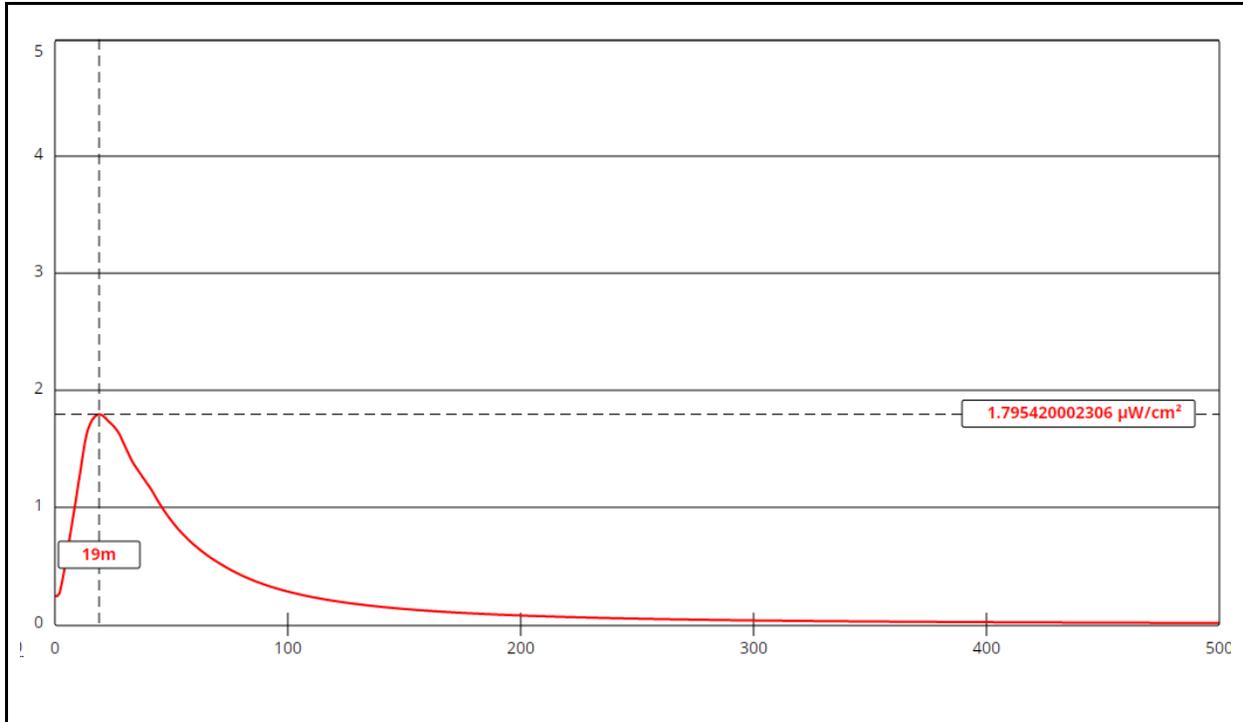
D is the distance in meters from the center of radiation to the calculation point.

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 adopted in the Commission's FMModel software for the ERI SHP-1AE antenna proposed for use. The highest calculated ground level power density occurs at a distance of 19 meters from the base of the antenna support structure. At this point the power density is calculated to be 1.8 $\mu W/cm^2$, which is 1% of 200 $\mu W/cm^2$ (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 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 of the Commission's Rules exempts 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 exposure in excess of FCC guidelines.



Ground-Level RF Exposure (Controlled Area)

OET FMModel

KRZY-FM 290C Auxiliary

Antenna Type: ERI SHP-1AE (Type 3)

No. of Elements: 1

Element Spacing: 1 wavelength

Distance: 500 meters

Horizontal ERP: 45 W

Vertical ERP: 45 W

Antenna Height: 21.3 meters AGL

Maximum Calculated Power Density is 1.8 μW/cm² at 19 meters from the antenna structure.

