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KBGZ(FM) Channel 280C1
Spring Creek, Nevada
Revised RF Exposure Study**

This study has been prepared in order to provide new ground-level power density calculations for FM station KBGZ, in connection with an antenna change and permissible power increase for that station. KBGZ is a fully-spaced station operating on Channel 280C1 at Spring Creek, Nevada. The station's ERP has been increased from 10.8 kW to 14.6 kW as a result of replacement of the antenna and installation of a larger transmitter. The new ERP remains consistent with the station's Class C1 authorization given the 487 meter HAAT.

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 KBGZ antenna system assume a Type 3 element pattern, which is the element pattern for the ERI LPX-4 antenna which has been installed. The highest calculated ground level power density occurs at a distance of 14 meters from the base of the antenna support structure. At this point the power density is calculated to be 38.3 $\mu\text{W}/\text{cm}^2$.

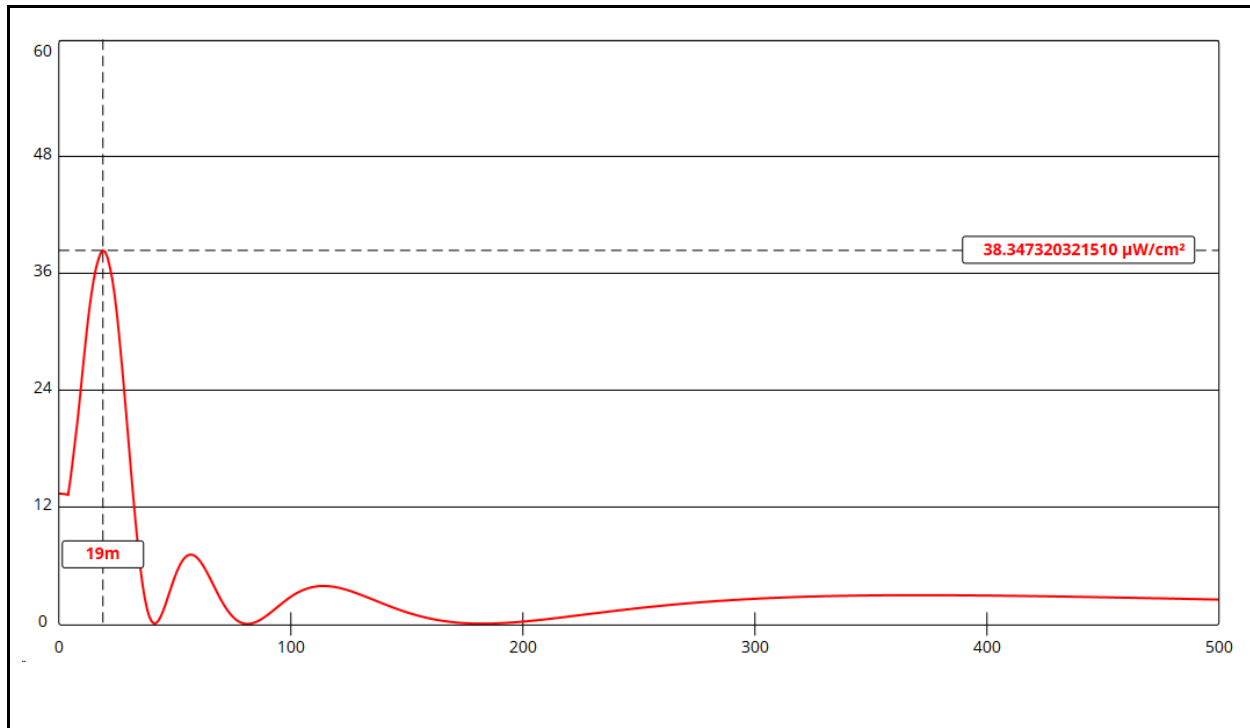
Calculations of the power density produced by KBGZ and the other stations at this transmitter site are summarized in the following table:

Callsign	Avg or Peak ERP Antenna Model	Relative Field	Height AGL	Calculated Max Exposure	Occupational FCC Limit	% of Limit
KBGZ 280C1	14.6 kW H 14.6 kW V ERI LPX-4 1.0 wavelength	FMMModel Type 3	49 m	38.3 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	3.8%
KLKR 207C1	5.0 kW H 5.0 kW V ERI LPX-3E 1.0 wavelength	FMMModel Type 3	43 m	20.8 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	2.1%
KLKO 229C2	4.5 kW H 4.5 kW V SHI 6832-4 1.0 wavelength	FMMModel Type 2	24 m	83.7 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	8.4%
KZBI 233C0	36.0 kW H 36.0 kW V PSI FM-8C 0.9 wavelength	FMMModel Type 2	25 m	43.7 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	4.4%
KHIX 244C1	12.6 kW H 12.6 kW V SHI 6813-8R 1.0 wavelength	FMMModel Type 1	49 m	223.0 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	22.3%
KEAU 284C2	1.15 kW H 1.15 kW V SHI 6832-4 1.0 wavelength	FMMModel Type 2	24 m	21.3 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	2.1%

These calculations show that the maximum calculated power density produced at two meters above ground level by the modified operation of KBGZ and the present operation of the other stations at this site (were their maxima to coincide, which they do not) is 431 $\mu\text{W}/\text{cm}^2$, which is 43% of 1000 $\mu\text{W}/\text{cm}^2$ (the FCC standard for occupational environments such as this one).

The Twin Peaks communications site is considered to be an occupational environment, located in rugged terrain of northeast Nevada on a remote peak which is home only to the three tower structures, and which is accessible only via a steep unimproved road. There are no public trails which access the site. Access is limited to station engineering personnel.

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

KBGZ 280C1 Spring Creek

Antenna Type: ERI LPX-4 (Type 3)

No. of Elements: 4

Element Spacing: 1.0 wavelength

Distance: 500 meters

Horizontal ERP: 14.6 kW

Vertical ERP: 14.6 kW

Antenna Height: 49 meters AGL

Maximum Calculated Power Density is 38.3 $\mu\text{W}/\text{cm}^2$ at 19 meters from the antenna structure.