

May 2007
KAJR(FM) Channel 240A
Indian Wells, CA
NIER Analysis

Facilities Proposed

The proposed operation will be on Channel 240A (95.9 MHz) with an effective radiated power of 1.75 kilowatts. Operation is proposed with a 2-element circularly-polarized omni-directional half-wave-spaced antenna. The antenna will be side-mounted on an existing tower located at the Indio Hills transmitter site.

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.

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.

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

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.

Calculations of the power density produced by the KAJR antenna system assume a Type 2 element pattern, which is the appropriate element pattern for the Jampro "double V" antenna

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proposed for use. 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.

The highest calculated ground level power density from KAJR 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 $16.9 \mu\text{W}/\text{cm}^2$, which is 1.7% of $1000 \mu\text{W}/\text{cm}^2$ (the FCC standard for controlled environments) and 8.5% of $200 \mu\text{W}/\text{cm}^2$ (the FCC standard for uncontrolled environments).

There are numerous other FM and TV broadcasting facilities at this transmitter site. Should the Commission so require, the KAJR will conduct on-site post-construction measurements of the ground-level RFR exposure levels, and submit a report detailing those measurements as a part of the covering license 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.