**Exhibit B-17**
**KKRY(FM)  Channel 222C  Miles City, Montana**
**NIER Analysis**

**Facilities Proposed**

The proposed operation will be on Channel 222C (92.3 MHz) with an effective radiated power of 100 kilowatts.  The antenna will continue to be side-mounted on an existing tower shared with non-directional AM station KMTA.

The FCC Antenna Structure Registration Number for the proposed tower is 1000160.  In the course of preparation of the instant application, it was discovered that the site elevation listed in this ASR record is incorrect.  Specifically, the site elevation is listed as 1152 meters AMSL, whereas this figure actually represents the elevation at the top of the tower. The registrations includes a comment stating "Cleared structure based on old tower file record 61697, FAA study 84-ANM-115-OE."  Our review of the old tower file record finds that it correctly lists the overall tower elevation as 1152 meters AMSL.  The correct site elevation is 960 meters.  Correction of the registration for ASR #1000160 is being pursued, and will in all likelihood have been completed by the time the instant application is reviewed.

**NIER Calculations**

Study of the area within 1000 meters of the proposed site reveals no other likely sources of non-ionizing radiation.  Thus, the ground level NIER values near the base of the proposed structure are believed to be negligible.  Precise calculations are made only with regard to the levels from this proposal.

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

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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.

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.

It is anticipated that KKRY will continue to operate with the existing ERI SHPX-10AC antenna. For the sake of a worst-case analysis, however, calculations of the power density produced by the proposed antenna system assume a one-bay Type 1 element pattern, which is the element pattern for "ring-stub" antenna. Under this worst-case assumption, the highest calculated ground level power density occurs at a distance of 47 meters from the base of the antenna support structure. At this point the power density is calculated to be 131.3 FW/cm², which is 13.1% of 1000 FW/cm$^2$ (the FCC standard for controlled environments) and 65.7% of 200 FW/cm$^2$ (the FCC standard for uncontrolled environments). The maximum ground-level power density from the antenna to be used is expected to be significantly lower.

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Pursuant to OET Bulletin No. 65, the KMTA-AM tower is fenced to a distance of at least 2 meters from the tower base.

Public access to the site is restricted by a locked gate and the antenna tower is posted with warning signs. 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.

## Power Density vs Distance



Power Density (μW/cm²) vs Distance (m)
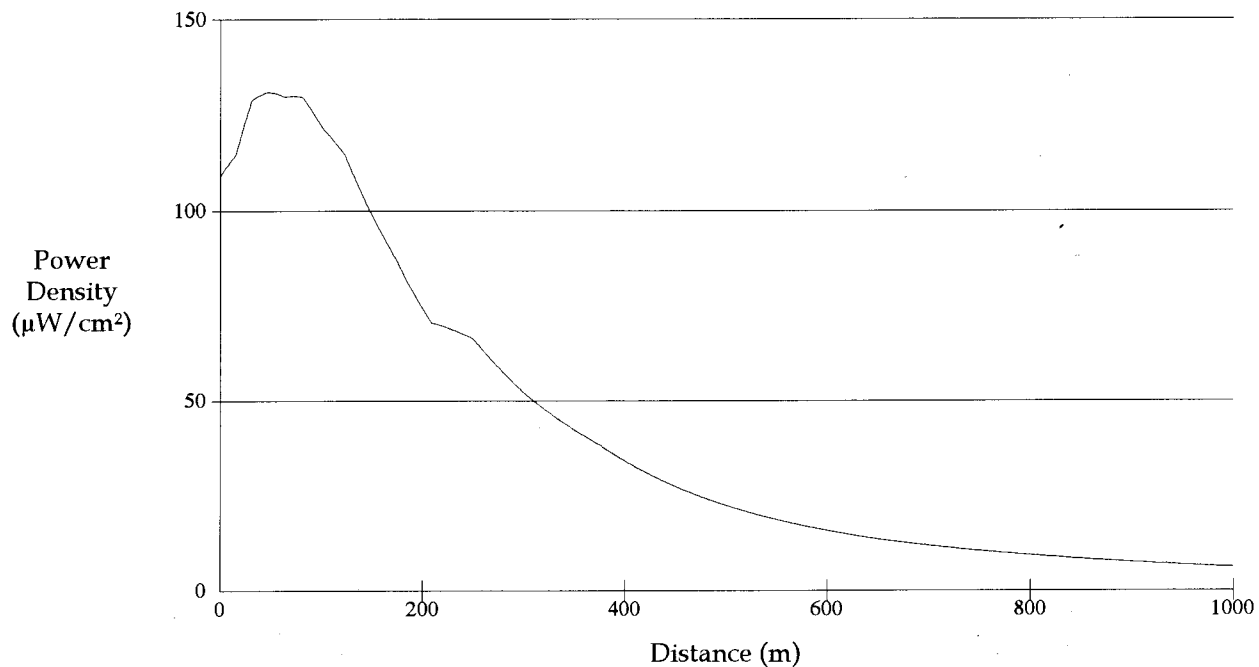
**Ground-Level NIER Analysis**                                    **OET FMModel**

**KKRY(FM) Miles City**

| | |
|---|---|
| Antenna Type: | Worst-case "ring-stub" assumed |
| Number of Elements: | 1 |
| Element Spacing: | dna |
| | |
| Distance: | 1000 meters |
| Horizontal ERP: | 100 kW |
| Vertical ERP: | 100 kW |
| | |
| Antenna Height: | 177 meters AGL |

Maximum Power Density is 131.3 $\mu$W/cm² at 47 meters from the antenna structure.

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